a. 5940.

AN

ESSAY

ON THE

ART of HEALING.

In which

PUS LAUDABILE or MATTER,

AS ALSO

INCARNING and CICATRISING,

AND

The CAUSES of Various DISEASES,

ARE

Endeavoured to be accounted for both from NATURE and REASON.

By JOHN FREKE, Surgeon to *St. Bartholomew's Hospital*, F. R. S.

——— *Si tibi vera videtur,*
Dede manus: aut, si falsa est, accingere contra.
LUCRET. lib. 2.

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M.DCC.XLVIII.

2

MVSEVM
BRITAN
NICVM

TO THE HONOURABLE

The PRESIDENT,

The TREASURER,

The ALMONERS and GOVERNORS

OF THE

Famous and Antient (*a*) Hoſpital of *St. Bartholomew, London.*

GENTLEMEN,

AS it is the Intention in every *Addreſs of this Nature*, either to ſhew the Relation the Dedicator ſtands in to the Perſon or Body to whom he dedicates; or to claim the Patronage of ſuch to his Writings; or to ſhew his Reſpects in Acknowlegement of Favours received; On all theſe Conſiderations, to whom can

4 G G 2

(*a*) This Hoſpital was founded before any other, *i. e.* near 700 Years ago.

can I more properly inſcribe this Treatiſe, than to You, who have joined me with you in the Care of our Fellow-Creatures? Allow me then, to take this Opportunity of aſſuring you, Honourable and Worthy Sirs, that I am, and ever ſhall remain,

Your faithful and obliged

Humble Servant,

J. F.

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E R-

ERRATA.

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THE PREFACE.

I SHALL make no Apology for publiſhing this Piece; becauſe I believe that the beſt Reaſon which can be given for any one's publiſhing a Book, ariſes from one of the following Motives:

The firſt is, from the Author's Thirſt after Fame; which, in other Words, is to ſay, from a great Self-Conceit and Vanity.

The ſecond may ariſe from Neceſſity, or a Deſire of Gain.

The third Reaſon to be given for publiſhing a Book, and the only one that I think can be allow'd of, ſhould proceed from a Deſire, if poſſible, to increaſe the Knowledge of our Fellow-Creatures; which at beſt is ſo limited, as not to be able to give a perfect Reaſon for any thing in Nature; and, for Inſtance, not ſo much as to demonſtrate why the ſmall Stem of a Roſe admits to it that Quantity of the fine Odour it affords: And yet, as it muſt be own'd that we are indued with a greater Degree of Reaſon than any others of God's Creation are, and that we, by our Application, can improve this Reaſon, on what Subject can we more nobly employ our Faculties, than on the Knowledge and Improvement of ourſelves, who are liable to

ſo

ſo many Accidents and Diſeaſes, that were it not for the ſuperior Knowledge of ſuch of our Profeſſion have as made it our peculiar Study and Care to help thoſe who ſtand in need of our Aſſiſtance, Mankind would ſoon be taught from the Want of us, better than by any thing that can be ſaid in our Favour, to know of how much Benefit a good Surgeon may be to Mankind?

This being not denied me, I will endeavour to convince ſuch of my Brethren, who have this great Truſt of taking care of the Health of their Fellow-Creatures repoſed in them, not to be content with the external Art of their Profeſſion, without being able to account for Diſeaſes, and the natural Cauſes of their Cure.

There are many, I confeſs, who ſay, Give me not Speculation, but Practice and Experience, to form a good Surgeon; Speculation being liable to lead the young Surgeon into Uncertainty, whilſt Practice confirms his Judgment. I agree with them, that Practice is neceſſary, and the firſt thing a young Surgeon ſhould apply himſelf to learn; and it is confeſſed, that many who have had very little Knowledge of the Art of Surgery, by their rather ſtudying where their Intereſt lay, have conceal'd their other Want of Knowledge, and yet have made a good Figure to outward Appearance.

But although this be true, what Man, of any tolerable Genius, would not deſire to be able to give a Reaſon

Reaſon for what he does, rather than go on, as many good Women do, practiſing only from Receipts and Experience, and who in time, it muſt be owned, thereby come to ſome Degree of Knowledge in the Art of Surgery? But would any one, who is regularly bred, contend for the mere Ability of practiſing mechanically? Should not every one be able and willing to anſwer the Queſtion of an ingenious Inquirer in our Profeſſion, as readily as any one in another can in his?

For my own part, I ſhould think my Time but meanly ſpent, in writing only a mere practical Treatiſe of Surgery, after ſo good a one as Mr. Wiſeman's *has ſo long and ſo deſervedly been approved of and applauded by the beſt Judges of our Country, both*

both for its Accuracy of Style, and juſt Deſcription of Diſeaſes and Methods of Cure; as well for Directions towards a decent Behaviour in Conſultations, as in a prudent Conduct in private Practice.

How any Author, who has written ſince him in our Language, has ſucceeded, I leave to the Conſideration of the Public. If Mr. Wiſeman *has been too copious in the Remedies offer'd to the young Surgeon's Choice, have not ſome, who have written on Surgery ſince, been too brief? For ſurely, if an Aphoriſm may be allow'd of,* Aliquid pro forma *is not a bad one. Although I confeſs it ought not to be the Practice of an experienced Surgeon to do any thing to amuſe the Patient only; nevertheleſs, till ſome*

Principles

Principles are eſtabliſhed in the Mind of the Practitioner, ſo as that from Reaſon he can deſcribe the Diſeaſe and its Cure, he may be ſaid to practiſe by rote, or from Memory only.

In order to make this effectual, I ſhall endeavour to demonſtrate what I have never yet ſeen attempted to be ſhewn by any Author.

And as to this Work now intended, I flatter myſelf it will be made as familiar and plain to the Learner as I think it is to me. Inſtead of this Method, had I, as moſt Writers do, laid before me a great Number of Authors, and made large Quotations, differing only in Style and Diction from them, though I had ſhewn no Genius in the Performance, I ſhould have been ſure

of ſome Commendation at leaſt from the Ignorant, who are better pleaſed by Deſcriptions without Reaſoning, than by troubling themſelves about it. Or if I had been ſo vain as to interlard my Story with a large Hiſtory of Caſes, which from my own Experience I could eaſily have done, as well when I was with Mr. Blundell, *as likewiſe from the great Opportunity I have had ſince I have been a Surgeon upwards of twenty Years in* St. Bartholomew's Hoſpital; *which was founded before any Hoſpital in* Europe, *and is one of the largeſt, and beſt accommodated for its Uſe; from hence I could, I ſay, have made a Figure, and without any Reaſon have ſhot over the Heads of many of my Readers: But as I chuſe to be guided by Reaſon only, I diſdain ſuch Helps to Reputation; for nothing*

can

can make me aſham'd, but the Thoughts of loſing Time about what may be of little Service to others. I could likewiſe have publiſhed ſome uſeful Inſtruments, not taken out of other Mens Books, but of my own Invention; of which I ſhall ask no Man's Opinion; they being ſuch as I can affirm to be of more Uſe for their ſeveral Purpoſes than any I have ſeen of the ſame kind: But as publiſhing them does not come into my preſent Scheme, I ſhall at leaſt defer the doing it at this time; and ſhall therefore proceed with my Endeavours to demonſtrate, Why *Things in Practice are ſo, rather than that they* Are *ſo in general. — And until this be done, the young Student will be liable to forget what he has read concerning either: Whereas, had he imbibed a Scheme of Practice from ſettled*

Principles, he could hardly want a proper Remedy for moſt Caſes in any Family that has Bread, Beer, Milk, Eggs, Oil, Butter, Spices, Onions, Garlick, Honey, Wine, Vinegar, and Salt; with which he can anſwer any Intent almoſt his Patient can ſtand in need of, as well internally as externally, provided he practiſes on ſettled Principles, and he knows the Cauſe of the Diſeaſe he is to cure. I ſhall therefore firſt attempt to ſhew the Cauſe of Matter, *or* Pus laudabile, *or why Matter is* album, leve, et æquale, *with the Cauſe of Granulation and Cicatrizing.*

And as I have ſaid, my Intent was not to write after the Manner of any Author who has gone before me, but treat only of ſuch Caſes as I think I

can

can explain the Cauſes of, and the Methods of their Cure, from Reaſon only, avoiding Practice, and the Forms of Medicine as much as I could, ſo I ſhall only mention ſuch Diſeaſes, and their Cure, as I think I can ſhew a mechanical Cauſe for, from the ſeveral Redundances of Nature and Accidents.

Had this ever been attempted by any one, I ſhould ask myſelf what Reaſon I had at my Age to write a Book; but from the Novelty, and I think the Uſefulneſs of the Subject, I ſhall forgive myſelf for the Eſſay, if it ſhould not pleaſe the Reader, as well as it did ſome, who, contrary to my firſt Intention, prevail'd on me to print it. And why ſhould not the moſt uſeful Profeſſion (as that of Surgery is acknowledged to be) have as

ſettled a Scheme, if poſſibly it can be obtain'd, as any other Profeſſion boaſts of?

Were any one to write the Hiſtory of a County, he would not content himſelf only with deſcribing the Roads of it, though it were done by the moſt accurate Map that ever was made, after he found that another Man, in deſcribing another County, had not only ſhewn the Roads of it, but had likewiſe demonſtrated its various Earths, Minerals, Waters, Buildings, Cuſtoms, Inhabitants, &c.

Therefore I think it may be as fit for me to go further in deſcribing the Laws of my Profeſſion, if I can, than others have done, as for the ſecond Deſcriber of his County to outdo the former.

No Man, it is true, that on meeting cross Roads, and having lost his Way, when after he knew it, had Want of a Direction, and so need not set up one for the Use of others: But if he did it, if he were not thanked for it, he would be an ill-minded Man that would condemn him for doing so useful a Thing. Therefore, Reader, if this sort of Reasoning, which I here offer for your Advantage, be not approv'd of, the Fault will then lie on your Understanding, or on that of the Author, who has no other View in writing this Essay, but that of being on the Side of Reason. As for those who are not of the Profession, who, according to the wonted Good-nature of the World, will be giving their Verdict

Verdict upon an Author they may not understand, as I write not this to gain their Applause, so I assure them I fear not their Censure.

THE

THE

ART of HEALING.

INTRODUCTION.

IN order to my explaining this great *Phænomenon*, and making it eaſy to be underſtood, I ſhall endeavour, in the firſt place, to conſider the different Shapes, Texture, and Uſes of the Blood, in nouriſhing the ſeveral Parts of the Body. And altho' I purpoſe that this Performance ſhall aſſiſt the Underſtanding of the Surgeon in his general Practice, I ſhall avoid deſcribing, as much as poſſible, particular Diſeaſes, and their Cure, in common Practice, and only mention ſuch of them as may illuſtrate the Truths of this Theory, and give

give Examples promiſcuouſly, as the Subjects ſhall require.

What I propoſe to ſhew in the following Treatiſe is, firſt, Why *Matter*, or *Pus laudabile*, is white, when the Blood from whence it is formed is red; or rather, why, as Authors deſcribe it to be, it is *album*, *leve*, *et æquale*, when the Blood, from whence it is formed, is not only red, but, in Compariſon with many other Fluids, very heavy.

I ſhall, in the ſecond place, endeavour to ſhew how Digeſtion is perform'd naturally, from the forming of young Fleſh: For where-ever there are Granules of Fleſh, there muſt of neceſſity, according to my Hypotheſis, be good digeſted Matter, in proportion as the Wound or Ulcer ſhall be more or leſs cloathed with

with it. This is found by every knowing Practitioner to be undeniable; but as my Intent is not to treat of Caſes in Surgery merely as a Practitioner, I ſhall rather endeavour to ſhew *how* Things are ſo, than that they are ſo.

I ſhall, in the third place, after the Method before ſpoken of, ſhew how Suppuration is effected; and this will be more eaſily explain'd, by underſtanding the two former Heads.

CHAP II.

Of the BLOOD.

IN order more clearly to underſtand theſe Propoſitions, it will be very neceſſary to deſcribe the Blood in its Colour, Conſiſtence, and the Shape of its Particles. I ſhall not need to conſider it as containing ſo many Salts, and ſo much Sulphur and Earth; I chuſe rather to leave this to the Speculation of the Chymiſts.

Firſt, as to its Colour; which, whilſt circulating in the Arteries, is of a bright Vermilion, and, when in the Veins it is of a much deeper or aduſt Red. It ariſes from the Globules of the Blood only; theſe Globules, are ſmall Particles, which may be

be ſeen by a Microſcope to be connected Bodies, always preſerving their Shape; which, beſides many other Experiments, will prove that they are of a very glewy Nature; for if they were not ſo, and very different from the *Serum*, they would be blended together in their Progreſs, and run into Confuſion; ſo that the ſmall Veſſels muſt of Neceſſity be crouded and ſtopt up with them: But, from their different Conſiſtence from the *Serum* of the Blood, though they are ſo tenacious, and though they are ſo infinitely numerous in one Drop of Blood, yet, I ſay, the *Serum* is ſo fluid, and, conſequently, ſo different in its Parts, that it is impoſſible, in a good State of Body, that the Globules ſhould ever unite in their Circulation, but they muſt paſs by ſuch Entrances in their Circulation

as are not adapted to receive them, which are nevertheleſs contriv'd to receive the thinner Parts. Indeed the Globules of the Blood are ſometimes ſo broken by peſtilential Fevers, or depraved Appetites after a Courſe of Debauchery, as to be almoſt quite diſſolved or melted into the *Serum*, ſo as to paſs with the *Serum* into many Parts of the Body which they ought not to get through; as through the ſecretory Ducts of the Kidneys in making bloody Water, likewiſe in Sugulations on the Skin, which are ſometimes ſo bad as to cauſe the Parts to mortify; as may be ſeen in the *Petechiæ* in the Plague, the Small-Pox, and other peſtilential Diſeaſes.

Though the Globules of the Blood, as I before remark'd, are under a Neceſſity,

Neceſſity, whilſt circulating with their Fluid about them, to be kept uniform and aſunder, yet whenever the Blood is extravaſated, the contrary Effects are found; for, after bleeding into a Porringer, the Globules, being very tenacious, adhere ſo cloſe to each other as they cool, and conſequently take up leſs Space, that, by their Contraction, they ſqueeze out the *Serum* from amongſt them, and ſo become two different Parts to your naked Sight. In like manner whenever the Blood is extravaſated in great Quantities, lying deep amongſt the Muſcles, ſo that it cannot eaſily perſpire, you will find the Globules connected ſo cloſe together into a *Thrombus* or *Coagulum*, as to appear perfectly carnous.

From

From hence, and many other Proofs, I ſhall endeavour to ſhew in its Place, that the carnous Parts of the Body are made out of theſe red Globules. Again, when you ſee any large Quantity of Blood in a Cloth, you will find it not unlike looſe Fleſh, provided it has lain any time for the ſerous Parts to have been dried from it.

As I have been only ſhewing the globulous Parts of the Blood hitherto, and having propoſed likewiſe to ſpeak of the Conſiſtency of the other Part of the Blood with its different Uſes, I ſhall now treat of the Blood as it appears in one uniform Maſs, juſt after letting it out of the Veins, whilſt it is warm, and before the grumous Parts are ſeparated from the *Serum:* Then I conſider it as

having in it the Properties of Bones, Cartilages, Horn, and Hair, the Skin, Tendons, Membranes, and the muſcular Fleſh; for from the Blood theſe are all ſeparated; the Fat and the Bile are likewiſe ſecreted from it, as alſo the Sweat and Urine, with other glandulous Secretions. It is therefore the Aptneſs of the Strainer which creates the different Secretions of the bony and other before-mention'd Properties.

CHAP.

CHAP. III.

Of the SERUM *of the* BLOOD.

BEFORE I proceed further, I think it proper to deſcribe the Uſe and Properties of the *Serum* of the Blood, having, I hope, already ſhewn the Nature and Texture of the Globules of it.

The *Serum* is a thinner Part of the Blood, of a yellowiſh Colour, and, to Appearance, of one uniform Conſiſtence, and, generally ſpeaking, to common Appearance, not more fluid than good ſmall Beer; and though the Deſcription of it here given, as to its firſt Appearance, may be allow'd to be juſt, yet as it is known to contain in it the Properties of bony and

and membranous Parts, ſo has it alſo an aqueous Part ever flowing through it, which is received into it from all the Liquids you drink; or elſe how can any one account for the quick Paſſage of a large Draught of Water through the Skin, being drank when one is hot, or of the inſtantaneous Paſſage of the Urine at certain times, after drinking diuretic Liquors? Moreover, if this *Lympha* were not a different Liquor from the *Serum* of the Blood, the Sweat would adhere to the Shirt of him who wears it, as much as the ſame Quantity of the *Serum* of the Blood would cauſe it to adhere: From hence it appears to me, that the Uſe of the Fluids which we drink is to ſupply that River which waſhes off the Salts of the Blood through the Sink-Ports

of the Kidneys and the Glands of the Skin, and alſo to be a Vehicle to carry on the Globules to their deſtined Uſes; the bony Particles to theirs, the membranous, and thoſe which conſtitute the Nails, the Hair, *&c.* to theirs. And if it was not ſupply'd from the Liquors we drink immediately, the Juices of the Body would ſo abound with the Salts which would be extracted out of Vegetables, as well as from the ſalt Fleſh and Fiſh, and other Eatables, that it would be impoſſible to remain one Moment in perfect Health; it being manifeſt, that many Diſeaſes do certainly proceed from a Redundancy of theſe Salts in the Blood.

On the whole, as I have ſhewn in the firſt place, that the Globules

of the Blood are diſtinct Parts, moveing in a thinner *Medium*, which is call'd the *Serum*; and that though they are tenacious, they never can come together whilſt floating in that thinner *Medium*, becauſe there muſt of Neceſſity be ever Parts of it remain betwixt each Globule of the Blood.

In like manner, as the *Serum* has another Order of Bodies moving in it, which I before deſcribed the Uſes of, and though the Forms of the Globules are more eaſily deſcribed by being perceived through a Microſcope in living Subjects, and by their Colour and Coheſion, yet it is as certain that they move on in their different Orders and Arrangements, till each paſſes through its different Meſh adapted to receive

them; and ſo the bony Strainers ſeparate bony Particles to nouriſh the Bones, the cartilaginous the tendinous, the membranous the muſcular, and every other Part, by this means, receive from the Blood their ſeveral Allotments, by the Aſſiſtance of the Flegm or watry Part, which continually, like a fine navigable River, brings new Supplies from all Parts, and afterwards ebbs off all the Soil of a capital City.

I doubt not but what is here advanced, that every Tribe of the ſeveral Sorts of Secretions from the Blood do keep their proper Bounds; but when they paſs through diſeaſed Parts; and tho' this be undeniable by all who have been acquainted with the Truth of this Matter, yet I ſhall not wonder to find many, who will look on

on theſe Speculations as the Suggeſtions of Fancy only; and therefore ſhall endeavour to ſhew the Truth of it from undeniable Facts, which, till lately, could never have been ſo eaſily demonſtrated. In order to which it will be neceſſary to deſcribe the Formation of the Bones; and if thereby I can ſhew, that the cretaceous Matter, which gives a Denſity to the Bones, be *ſui generis*, whilſt it is circulating in the Blood, then every other Secretion may be allow'd from a Parity of Reaſon to be ſo too, altho' not ſo clearly to be demonſtrated.

The Bones of a *Fœtus*, in their firſt Formation, are ſo tender as not to be ſo hard as a Cartilage; and it is plainly ſeen from whence their Denſity ariſes afterwards, and that is from

from a cretaceous Matter, which is receiv'd and retain'd in the bony Membranes, till they become ſo ſolid as to be able to ſupport the vaſt Weight we ſee Men carry. Thoſe who are moſt prone to break their Bones have too much of this *Creta* in them, and thereby become ſo fragile, as that I have known a Lady, who broke one of the *Rotulæ*, break the other by Flection only, on going up-ſtairs.

This *Creta* is ſeparable by diſſolving the Bones in *Papeius*'s Digeſter, and then adding a large Quantity of Water to the diſſolved Bone; by which means this cretaceous or chalky Matter will ſubſide from the Glue, which was the membranous Part of the Bone in its firſt ſtate. Now had this Matter been always of one

one certain Colour, no other Idea could have been formed about it, than that ſome Salts, by meeting with others, had cauſed a neutral Matter, which is called the Chalk here ſpoken of; but what I am to ſhew will not only prove this *Creta* to be *ſui generis*, even whilſt it is circulating with the reſt of the Blood, as really as it is ſhewn to be ſo in the Bone itſelf. What will demonſtrate it is this:

Some time ſince there were produced before the *Royal Society* in *London* ſome Bones, not of one only but of various Hogs; which Bones were all of a Vermilion red Colour. The Occaſion of their being ſo proceeded from their feeding on ſome Bran, which a Printer of Linen or Cottons had made uſe of to clean his

his Cloth with; Bran being found to be the beſt Material to clear them withal; the Dye-Stuff was Madder. The Printer, not knowing the Conſequence, and being willing to put the Wheat-Bran to ſome Uſe afterwards, he fed his Poultry and Hogs with it; which ſo tinctur'd the cretaceous Matter of the Blood only, that both the Chickens as well as the Hogs Bones become of this Colour; whilſt every other Juice of the Body was no way affected by it: Even the Cartilages and Membranes had not the leaſt Tincture of it.

This I think will ſhew the wonderful Fabric of the Blood; that, though it contains in it the various Nutriments it affords to ſo many different Parts, yet they are ſeverally to be thought of, even whilſt they flow together

together in the Form of Blood: And why may not this Thought be carried further, and from hence conclude, that the Blood may in ſome Parts be deemed ſound, and diſeaſed in others; or elſe why are ſome liable to Diſeaſes on certain Parts only, and at the ſame time be very healthy in others? But if we once come to indulge our Fancies in exploring the Wonders of Nature, and only contemplate even thoſe we know to be true, as, Why a Family Diſeaſe ſhall lie dormant for a Number of Years, and according to Cuſtom, at a certain Period, break out either into a ſcrophulous Complaint, or a Conſumption, or in many other Diſeaſes I need not enumerate; and if we proceed further yet, and conſider of the Cauſes of the Features, and of the Voices, and even the ſame

Appetites proceeding from this circulating Juice which their Parents had, how ought every preſumptuous Reaſoner to be fill'd with Aſtoniſhment? Yet altho' this be difficult to account for, it is known to be all true; and therefore, what Truth ſoever we can trace out from Reaſon I hope it will not be thought unworthy our inquiring after. Now if I have ſhewn that various Properties are ſuppoſed to be in a ſeparate State, whilſt circulating in the Maſs of Blood, then it will not be hard to ſupport the Probability of the great Quantities of Liquors all Creatures take in by drinking, to be ever flowing thro' the Whole, before it be ſecreted by Urine, or any other Way. This will account why Wine, or any other ſpirituous Liquor, which is received into the Blood, hurries itſelf on

on, till Time gets rid of it: And it may further ſerve to ſhew Cauſes for many other *Phænomena* in Nature, not yet accounted for.

Having now, in as plain a Manner as I could, ſhewn the Nature and State of the Blood, without deſcribing it by a chymical Proceſs, which if I could perform, no one could ever be enabled to learn from thence what I am fully perſuaded I ſhall be able to demonſtrate, and that is, *firſt*,

CHAP.

CHAP. III.

Why Pus laudabile *is* Album, Leve, et Æquale; *and alſo what* Granulation *and the Generation of* young Fleſh *proceeds from; with the Cauſes of* Cicatrizing *or* Healing.

IT may be ſaid, the Word *leve* ſhould rather be ſpelt with an (æ) than with an (e); and it it was ſo it would rather ſignify *ſmooth* than *light*: To which I anſwer, That no Fluid is boyant in Water but what has more Corpuſcles of Air contain'd in it than Water has; and though Matter ſinks in Water, yet it is very light when compared with the ſame Quantity of Blood from whence it is formed; which will anſwer to my Proof of what I propoſe to ſhew from it.

For

For the better informing the Reader, and preparing his Mind to underſtand this novel Doctrine, I will ſuppoſe the *Pus laudabile* proceeds from the whole Maſs of the Blood, ſo as to become a Deſpumation or Cream; tho' it cannot be ſaid to be formed as Cream ordinarily ariſes from Milk; for that proceeds from no other Cauſe but from its being the moſt oily, and, conſequently, the lighteſt Part of the Milk; and therefore in Time it emerges from the more aqueous Part, and thence becomes uppermoſt; but the *Pus laudabile*, although it may in Appearance be ſaid to repreſent the former, the Deſpumation of it is occaſioned from a quite different Motive. As therefore the clearing up of this Operation in Nature, and as it is

quite

quite a new Notion ſtarted, and here offer'd to the Reader for his Approbation or Refuſal, as likewiſe much is pretended to be offer'd in it towards enabling the Reader better to attain to the Art of Healing, he is deſired to read this Hypotheſis with great Diffidence, and endeavour to anſwer it, if he can, in his own Mind, as he reads it, rather than be too eaſily prevail'd on by any falſe Shew, though ever ſo well garniſh'd; and if I do not make what I pretend to demonſtrate appear as plain to the meaneſt Capacity as to the moſt diſtinguiſhing Mind, I think it not worth the Attempt.

In order therefore to make this Matter plain, I now ſuppoſe a Limb juſt taken off, with the Arteries tied up, and the Stump dreſſed with Lint and

and reſtringent Powders, in order to choak up the remaining Blood-veſſels; which, though too ſmall to be ſecured as the former, yet would otherwiſe have bled ſo much as to have indanger'd the Life of the Patient. What naturally follows is, that every Pore of the reſcinded Parts muſt of conſequence, and always does, diſcharge ſuch Liquors or Secretions as were wont to nouriſh the ſeveral Parts they flow'd from. For Inſtance; The Bone diſcharg'd a bony Fluid; the Skin and Membranes theirs; whilſt every wounded Fibre does the ſame. The firſt Alteration to be obſerved in this is, its Gleet begins to be interſperſed with ſome Bubbles of Air; and this never happens till you begin to find a Turgeſcence in the Extremities of the Blood-veſſels, occaſion'd from the Globules

Globules of the Blood, which are carried on to their Extremities; and there, not meeting with inoſculating Veſſels to carry them further, they of Neceſſity adhere one to the other, and thereby become Fleſh.

And that this may be the true Cauſe of Granulation need be no Wonder, if you inſpect a *Coagulum* of Blood, which has been dried in a Cloth for any conſiderable Time; for I'll undertake to ſhew it may become ſtronger in its Conſiſtence from thence than common muſcular Fleſh is ſometimes found to be.

Now, as it is generally found to be true, that where-ever you have good digeſted Matter you muſt have Granulation of young Fleſh firſt produced, it thence muſt neceſſarily

 follow,

follow, that the Bubbles of Air before ſpoken of muſt ariſe from thoſe Diſcharges which forced their Way through this Granulation here deſcribed; and that the reſt of the Extremities, which were not begun to be incarned, muſt continue to gleet on from the ſame Cauſe which at firſt they did gleet from, which is, becauſe as yet their Extremities had not received that Turgeſcence which the former had obtained: But, as they became incarned, the ſame Secretions, which before were wont to flow without Interruption, met with a perfect Sponge at the End of each minute Fibre, to break its Way through.

Now, as I before hinted at, what is by every one allowed, who know any thing of the Matter, that all

Fluids are more or leſs ſo, as more or leſs Air is contained in them; then it muſt follow, that, if there be ever ſo little Air in the Blood, it muſt be ſo diſperſed, that no Particle can be without ſome of it. If this be allowed me, when the Globules are ſo detained at the Extremity of each Fibre, they hinder the *Serum* from being diſcharged ſo eaſily as it uſed to flow through them before theſe Obſtructions were formed. It naturally follows, therefore, that the Air contained in the *Serum*, muſt, on its paſſing with Preſſure through theſe Sponges, cauſe a Deſpumation as certainly as Soap-Suds, made of the ſame Conſiſtency, of the *Serum* of the Blood, would be made to deſpumate, if that were forced through an artificial Tube made with a wet Sponge at its Extremity.

Now,

Now, if the Two Liquors here ſpoken of, *viz.* the *Serum* of Blood, and a Solution of Soap in Water, have a great Reſemblance to each other, what may be deduced from their Properties; for each ſhews they can deſpumate alike? and they each have a Tenacity to ſupport ſuch Bladders of Air for a time, as may make this Deſpumation remain viſible; they have alſo a Slipperineſs, which may make their Parts give Way, when the Air, which is contained in them, obliges them ſo to do, when they paſs through theſe little Sponges of Fleſh before deſcribed.

If you whip up either of them, with a Whiſk, to a thick Cream, in either Caſe they will produce the Ap-

pearance of *Pus laudabile* more than any thing I can think of.

Moreover, as Dyers prefer the Slipperineſs and ſcouring Quality, of the Bile before the Power of Soap, and as the Blood is produced from the Aſſiſtance of the Bile in its firſt Formation, and it is found, that the *Serum* of the Blood lathers as much as Soap, it ſeems to me to be a Proof of what I would here eſtabliſh; *viz.* that it can want the Proof of Agitation only to produce this Effect. Now how can this Proof be wanted in the Proceſs here ſuppoſed? Can the *Serum* of the Blood paſs thro' theſe Sponges, without cauſing the Air contained in each Particle to break it into infinite Parts, as effectually as a Whiſk could whip it into a Cream? For, if any of it can be ſuppoſed to deſpumate

at

at all, then that which cauſed any, muſt cauſe every Particle to be in the ſame State with the former.

If you conſider the Cauſe of Matter, from any other Proceſs, ariſing from the old Notion of well-concocted or digeſted Matter; as theſe Terms are borrowed from Chemiſtry, ſo, till ſome Proceſs have been ſhewn in that Art, which will produce as nigh a Reſemblance to Matter as what I am deſcribing, let who may be wedded to old Conceits, I ſhall believe my Notion the moſt probable that can be given from Nature and Reaſon; for what is Reaſon, but the moſt probable Conjecture offered to prove a Thing by, againſt nothing to contradict it, but certain Words gingling in our Heads?

If any Man will ſhew me, That any Part of the Blood put into a Sand-Heat, and digeſted there, ever produced any thing like digeſted Matter; or if they can ſhew, that decocting it ever ſo long produced any thing like concocted Matter; then I will ſuſpend my Belief, and ſay, that what I offer for Fact may not be ſo: But, on the contrary, if mine be the beſt Conjecture, it is the beſt Reaſon hitherto offered, to ſhew what *Pus laudabile* is produced from.

Thus I have endeavoured to ſhew the mechanical Cauſe of it; but, as it is difficult to fix new Notions in the Heads of thoſe who profeſs old ones, I chooſe to proceed further to try this Matter by Proofs from Practice. If therefore you deſtroy the

Incarnation or Granulation of a Sore, till you leave the Extremities of the Fibres quite bare, your Matter ceaſes, and a Gleet enſues; for then the Sponges or Globules of the Blood, which cauſed the Deſpumation, or *Pus laudabile*, being deſtroyed, their Juices flow through each Fibre again unagitated; and ſo it comes away in the ſame State as it was wont to do when it nouriſhed the Part it was intended to nouriſh. As a farther Proof of this, let any one endeavour to reduce a *Fungus* by the Vitriol Stone, and he may find the Difference betwixt doing it by Vitriol, and the red Precipitate; for, the Vitriol being a Salt, it melts into Interſtices of theſe Sponges or *Granulæ*, and ſo lets looſe the Gleet much freer than the Precipitate, which, on the contrary, always thickens the Matter; becauſe, though

though it ſerves, as the Vitriol does, to reduce a *Fungus*, yet it melts not down into it as the former, but only crops the Tops of them, and thereby connects them cloſer, and cauſes the Matter to paſs the more difficultly through them. As a farther Proof, I will now conſider from what Cauſe large ungovernable *Funguſes*, interſperſed with ſcirrhous and oſſeous Subſtances, do frequently ariſe; ſo that, when their Cauſes are accounted for, their Cure may be the eaſier made manifeſt.

In order to clear this Matter, I muſt ſuppoſe, that ſome *Granulæ* of Fleſh always muſt precede others; becauſe the moſt flaccid Parts, which are endued with the greater Quantities of Blood-veſſels, will thruſt forward theſe Globules, before the Bones

Bones, from their Denſity, can admit theirs to come on; this being ſuppoſed, the firſt will naturally, from their Tenacity, adhere together, before the bony, membraneous, and tendinous Globules can appear. Thence it muſt neceſſarily follow, that the Gleet, from theſe denſer Parts, muſt, by ſtriving to get through the firſt united Globules, not only lift them up into a *Fungus*, but alſo cauſe it to partake of their bony or membraneous Qualities. And tho' in this Caſe the young Surgeon muſt deſtroy in ſome meaſure the moſt forward Granulation, to wait for the latter's coming up, and incorporateing with the former, yet Experience will ſhew him, that, if he totally deſtroys the firſt Granulation, and thereby leaves the Fibres quite bare, ſuch a Gleet will enſue,

ſue, that may cauſe him to wait a much longer time for Incarnation than at firſt he did; becauſe the Fibres having been for ſome time by the former Granulation ſo dilated and thickened by the Impulſe of the Blood preſſing againſt their Extremities, the Globules are not ſo apt to be retained at their Extremities as formerly, when no unnatural Dilatation had happened to them.

Thus I hope I have made it plain to the Reader, that *Pus laudabile* is, from a natural Cauſe, produced from the Blood in general, and, from the ſame Cauſe, is become a Deſpumation.

Having likewiſe gone ſo far, as to ſhew what Incarnation is produced from, ſo as I formerly hinted, when the two firſt Propoſitions were

cleared up, Cicatrization would the more eaſily be underſtood.

I come now to ſhew how Cicatrization is performed by the ſame rational Cauſe as Incarnation is produced; for, if the Globules in the latter naturally muſt, from their Tenacity, adhere to each other, the glewy, bony, and horny Parts of the Blood, where at laſt they find it more difficult to paſs through the Globules, which are now by degrees compacted cloſer together, the horny Matter connects together, and thence ſuperinduces a Cicatrice; and ſo the Aphoriſm of *Hippocrates* is verified:

Quod ſiccum eſt proximum ſano.

Having, I hope, clearly ſhewn the Nature of *Pus laudabile*, of Incarna-

tion, and Healing, I come now to ſhew, that the ſame Mode which Nature takes to produce Matter and Fleſh from the Stump of a Limb when taken off, will produce it on all other Occaſions where Matter may be found; for, if any of the natural Juices of the Body mix with others, they were not intended by Nature to be incorporated with, they become a violent Enemy to the Body, inſtead of giving it Comfort. For Inſtance, if either Urine or Bile, by Accident, mix with any other Juices, they produce what I before deſcribed; or if any Glands are overcharged by catching Cold, as thoſe of the Noſe, the Lungs, the Kidneys, &c. if they, or ſuch of them as Nature intended to have relieved the whole Body by, if they had done their Office, by ſecreting a large Quantity of *Mucus* from

from thoſe of the Noſtrils, or by coughing it up from thoſe of the Lungs, or by a Sediment found in the Urine from thoſe of the Kidneys; if theſe, ſeverally or together, diſcharge their proper Secretions outwards, they generally diſcharge ſuch Evils as the Air had, by the Patient's catching Cold, impregnated theſe Glands withal: But theſe Glands being now overcharged, ſo that their Ducts become obſtructed and ſtrangled; by this means their Contents are returned into the Blood, and ſo produces that Size or Glue, which, after catching Cold, you find on Blood let out in a Veſſel: From hence naturally ariſe Obſtructions of the Capillary Veſſels of the Body, as alſo Inflammations, and ſometimes Impoſtumations; for, whenever this glewy Matter fixes on any Part, one of theſe Things muſt follow;

follow ; either, by bleeding the Patient, you take off the Force of the Blood, by making room in the Veſſels which were too crouded, and thereby permit Nature to abſorb ; or by diſcutient Means, and a warm Bed ; you get rid of it, or elſe a Tenſion and Inflammation on the Part increaſes, till the Veſſels being no longer able to endure their Stretch, they give way ; and ſo, their fiery Juices being extravaſated, it now becomes the Surgeon's Care to judge cautiouſly, whether it may be for the Safety of the Patient rather to diſcuſs, or attempt to ſuppurate, the Part affected. If a Fever attends ſuch an Inflammation, it is always ſafeſt to endeavour to bring on a Suppuration, becauſe the Fever ſhews, that ſome of the morbific Matter is yet circulating in the Blood ; but if no Fever

remains,

remains, then general Evacuations, and a diſcutient Cataplaſm or Fomentation, with an Ointment, may be applied; and therefore, though I avoid as much as poſſible to give Forms of Receipts for any thing, chuſing rather to give general Reaſons, than enter into the minute Circumſtances of Practice, yet, as I have ſeen in an Author, a Pultice made of White-bread and Milk recommended, and ſaid to be as good a ſuppurative one as any, I think proper to give my Thoughts on the Nature of a ſuppurative Cataplaſm, and wherein it ſhould differ from one that is diſcutient.

The firſt Cauſe of Suppuration is already ſhewn, by ſuppoſing the Part affected to be diſtended beyond its Tone, and, when the Veſſels are burſt,

burſt, the Juices being extravaſated, it remains in the Part as yet not formed into Matter, but in a State either fit to be diſcuſſed, or to come to Suppuration, as the Matter ſhall be found, and the Part more or leſs heated by it, or the Skin be more or leſs inclined to perſpire any thing through it; for it is incredible what Quantity of Blood or proper Fluids will perſpire through the Skin ſometimes: But I apprehend the Cauſe why Matter is more liable to remain where it is collected, than Blood, or any ſuch Fluid, as I have here ſuppoſed to be extravaſated before Deſpumation follows, is, becauſe, as Matter is a Deſpumation, every Particle muſt be a Bubble of Air, and ſo cannot perſpire as it would do, were it in the State of a common Fluid. What I have been here explaining, may ſhew why

at one time Suppuration is more liable to come on than at another, let the Surgeon apply what he will; and in either Caſe then a Pultice of white Bread and Milk may be commended.

But if you act with Skill and Judgment, a ſuppurative Cataplaſm ſhould be made of ſuch Materials, as not only may a little warm and invite to the Part, but alſo have a Mucouſneſs in them which may choak up and clog the Pores of the Skin, to retain the Matter there till Deſpumation follows from the ruptured Fibres in the ſame manner as is before deſcribed in a Stump where the Limb has been taken off. The Materials ſhould be ſuch as theſe; Figs, Onions, Marſhmallows, and white Lily-roots;

or you may, for want of theſe, add ſome Gums to your Pultice.

A diſcutient Cataplaſm ſhould differ from the former in the Materials of which it is to be made, as that they ſhould have the ſame Warmth as the former, but be leſs glutinous; they ſhould rather relax the Skin, and by their brisk *Effluvia* attenuate the Juices, that they may more eaſily perſpire, and ſo leave the Parts to recover their natural Tone.

Theſe Ingredients may be ſuch as Cumin, Fenugreek, and Linſeeds, with others of that ſort; the Flowers may be Camomile, Elder, Melilot, &c. Theſe being decocted in Water, and the Decoction boiled up to the Conſiſtence of a Cataplaſm, with the Fæces bruiſed, and ſome Ointment

Ointment made with Butter, and either grated Bread or ground Oat-meal, *ſecundum artem*, it may become a diſcutient Cataplaſm. Surely theſe will bid fairer than a white Bread and Milk Pultice will do, either to cure the Patient, or ſhew the Skill of the Surgeon.

Having made a Digreſſion to ſhew the Nature of a ſuppurative and a diſcutient Cataplaſm, I will proceed to ſhew what I promiſed, *viz.* that all Matter, wherever it be found to be *album*, *leve*, & *equale*, muſt proceed from the ſame Laws: And tho' in an Impoſthume it is concealed till the Integuments are laid open, yet, from what I have ſuggeſted, when it is laid open, the Sore is to be look'd on and treated in all reſpects as the

Sore of the Stump heretofore deſcribed.

If therefore you carry your Thoughts further, and conſider how the ſmalleſt Gland or Tubercule of the Skin comes to impoſthumate, the preceding Deſcription will account for the Cauſe of all alike; it muſt be owned nevertheleſs, that, upon reaſoning on theſe Points, there may be ſomewhat thought on for the firſt Cauſe of theſe Obſtructions; which may be from the Redundancy of the Salts of the Blood; which not being diſcharged by the Emunctories or Kidnies at certain Seaſons, they thereby accumulate to ſuch a Degree, as to become the firſt Cauſe of great Obſtructions; and when once an Obſtruction is formed, every Evil

Evil that can be thought on may follow from it.

This Conſideration gives me an Opportunity to adviſe the young Surgeon when he is ſent for to a Patient ever to keep in his Thoughts that he is call'd in only to help Nature; and therefore he ſhould ask this Queſtion, What Obſtruction or Strangulation is the Cauſe of the Diſeaſe I am ſent for to cure?'

If a Sore has too ſmall an Exit for the Matter to get off, as in *Fiſtula's* or the like, divide it ſo that when it becomes an open Sore, and the Matter iſſues not from a long Entry, it will the more eaſily heal, as it is generally found to do from Practice.

Again, if Glands are obſtructed, divide them where you ſafely may,

if they will not eaſily ſuppurate, which will take off this Obſtruction: And as you may from theſe two Caſes, find what taking of Strictures may do towards the eaſing your Patient, ſo if you keep this Doctrine in your Mind in almoſt all Caſes, and only ask yourſelf, How and where can this Caſe be produced by an Obſtruction? you will plainly perceive it will open to your Underſtanding much Reaſoning about it, which you at the firſt View might not think on: For every Tubercule will in its proper Place be ſhewn to be an obſtructed Gland, only overcharged perhaps with that which in a due Proportion would have been of great Advantage to it, and the Parts about it.

Thus far I have dealt in Generals almoſt, and endeavour'd to do what

before I never have ſeen attempted to be done, which is to treat only of ſuch Things, as may from Reaſon ſettle ſuch Rules for the Practice of Surgery, as may enable the Surgeon to know, without relying on an Author, when he acts on a rational Foundation.

I proceed now to treat of the *Cuticula*, the *Cutis*, the Glands of the *Cutis*, and of ſuch Diſeaſes as they are liable to, either from the Redundancies of Nature, or from their being wounded or affected from outward Accidents.

CHAP.

CHAP. III.

Of the CUTICULA.

I SHALL deſcribe firſt the *Cuticula* or *Epidermis*; not as an Anatomiſt would deſcribe it, but only to ſhew its Uſe, and the Diſeaſes it is liable to.

The *Cuticula* is the outermoſt Covering of the Body, compoſed of a horny or ſcaly Matter, which has no Blood-Veſſels belonging to it, as all other Parts of the Body have, but is only ſome glewy Part of the Blood left on the Skin, from its Tenacity, after the Sweat or thinner Parts of Tranſpiration paſſes off; each Scale having been ſecreted by the Glands of the Skin, which are ſituated there for that Purpoſe, and

are

are ſo infinite in their Number, as that to each Scale one of them ſerves for a Pedicle. Although in ſome Parts the *Cuticula* does not appear ſcaly, but as a thick Leather, particularly at the Bottom of the Feet, and on the Palms of the Hands of labouring Men; and alſo wherever the Part is conſtantly preſſed and worn; for by this means the great and benevolent AUTHOR of Nature hath wiſely provided that the induſtrious Man ſhall not be prevented in his Induſtry by any Fault to be charged on Him.

Thoſe Glands of the Skin which are the moſt conſtantly preſſed, from that Preſſure ſending out the greateſt Quantity of this Glue, which the Blood of all Animals very much abounds with, all Glue being made

out of it; as I have ſhewn this Glue flows moſt by Preſſure, the Hands and Feet have therefore ſuch a Quantity, that they look like Leather, from the Number of theſe Scales increaſing and adhering to one another; and yet you will find them to waſh off in different Flakes or Scales, when you waſh the Feet after ſoaking them in warm Water for any moderate Time. This Glue is that likewiſe which at length hardens into a Scar or Cicatrice, on the healing up of every Sore, as I before hinted.

SECT.

SECT. II.

Of the Cauſe *and* Cure *of* Corns.

THIS Glue before deſcribed is likewiſe the Cauſe of Corns; for if what I before hinted be true, that when the cutaneous Glands ſend out moſt of this where the Glands are continued to be preſſed, then it neceſſarily follows, that if any Point of the Toe, or any other Part continues to be preſſed, the horny Matter increaſes at that Point till the Preſſure ceaſes. This is the Cauſe of a Corn; to cure which, what is grown dry and hard muſt be pared off, and the Patient muſt wear an adheſive Plaiſter, which may keep the Part moiſt, and ſo prevent its hardening into a *Clavus*. By this means the Cure will be performed.

SECT. III.

Of the Cauſe *and* Cure *of* WARTS.

THE Cauſe of Warts is quite different from that which produces Corns; but as Warts ariſe from the Glands of the *Cutis*, and not originally from the *Cuticula*, as I have ſhewn the Corns do, perhaps it may be thought I had better not to have treated of them, till I come to demonſtrate the Nature of the Skin and its Glands; but I hope I may be excuſed for doing it before, ſince a Wart has the ſame Appearance to outward View as a Corn has, and is produced by the ſame Matter; nevertheleſs when I have done this I ſhall beg Leave to reſume my Subject of conſidering the Cauſes of ſome other Diſeaſes of the *Cuticula*, before

I return to thoſe of the *Cutis*, becauſe whatever appears belonging to the *Cuticula* may plead my Excuſe for it, though its Origin be from the *Cutis*. And here it may not be improper to deſcribe the Formation of the *Cutis* and *Membrana adipoſa*.

CHAP.

CHAP. VII.

SECT. I.

Of the CUTIS.

THE *Cutis* is the next Covering of the Body under the *Cuticula*; it has a great Strength of Texture in it, and in which all the *Papillæ* of the Nerves terminate; by which you may as well receive the Pleaſure from the Touch of an agreeable Thing, as you may receive and judge of the Pain cauſed by touching diſagreeable ones. And as theſe Nerves are infinitely diſperſed; ſo let this be ever remember'd, that there is no Nerve where there is not an Artery; and whereever there is an Artery there muſt be a Vein to join every the moſt minute Twig of the Artery to receive its Blood, after it has given and left Nouriſhment

Nouriſhment to ſuch Parts as were in want of it.

Now if there was not at the Extremity of every Artery a Vein to carry back its Blood, that Artery being ſtopped at its Extremity, the *Impetus* from the Heart would cauſe the Blood to ſtagnate there, for it could not return by the Artery it came in; and alſo their Extremities would become globular thereby; but the Veins do not only inoſculate with them, but that Union every-where produces a ſecretory Duct alſo, where they unite for the Diſcharge of Sweat, to moiſten and clean and keep open the Pores of the Skin. Moreover where theſe are thus united there muſt alſo be a Gland to ſeparate this Sweat, or other cuticular Secretion it is intended to ſecern from the Blood.

SECT.

SECT. II.

The Cauſe *and* Cure *of* Warts *continued.*

THE Cauſe of Warts ariſes from the Efflorescence or Prevalency of the Artery over the Vein in one of theſe Glands of the Skin; for thereby the Materiality of the Blood, which forms the *Cuticula*, when diſcharged from theſe Glands on the Skin, being ſtopped in the *Capſula* of the Gland after it was ſecreted, it becomes horny, and is what we call a Wart. The Cure of it is performed by ſome Salt of *Sal Armoniac*, or Spirit of Vitriol, or what elſe may ſate and fill up the *Capſula* of the Gland, till it can receive no more Nouriſhment from the Artery; and by this means for want of more Nouriſhment, it dries and crumbles away.

SECT.

SECT. II.

Of the TINEA *or* Scald-Head.

MY chief Aim in this Performance being to treat only of ſuch Diſeaſes as I hope I ſhall deſcribe from Nature and Reaſon, I ſhould not in Strictneſs, no more than in the preceding Chapter, have deſcribed this Diſtemper whilſt I am ſhewing the Diſeaſes of the *Cuticula*, but have conſider'd it as proceeding from the Imperfection of the Glands which ſeparate the Matter, that, as it tranſpires beyond the Surface of the Skin, hardens into Hair: But as Hair is an outward Covering of the Body, as well as the *Cuticula*, I beg to be indulged in this as in the former Caſe.

As I have hinted therefore, that there is a Gland to every Hair,

which ſeparates the Liquor, of which Hair is cauſed, ſo when this Gland is overcharged with this Liquor, either by Naſtineſs and Obſtruction from without, or from an undue Separation of this capillary Matter, it becomes rancid; and from thence Ulcerations are cauſed, and a ſtinking *Ichor* iſſues from the Roots of the Hair. To cure which, let looſe as much as you can this diſeaſed *Ichor*, which is the Cauſe of the Malady, by a digeſtive Cerate, which will ſoften and diſcharge all dried Scabs and Incruſtations: And if this don't do, rather than fail, pluck out ſome of the Hairs, which will eaſily come away, when the Roots of them have been any time ſoftened from the Diſtemper. And to ſave Trouble in this Operation, a Plaiſter ſpread with Pitch, by its Adheſion

heſion to them, will bring them away by the Roots; after which a digeſtive Cerate, apply'd properly, will cure the Patient, and frequently without any internal Medicine: For this being a local Diſeaſe, it were better for the Patient's Health that it be cured by Topics than by Internals.

And this ought to be the Practice always in all Caſes which are local; for if you can diſcharge outwardly that which affects any external Part, the Patient is more ſafely cured than by Purging, or other Evacuations; by which you firſt retract your Enemy into the Blood, and then you are to get rid of it afterwards, if you can.

From hence it may be very proper for every Practitioner to think of the mechanical Cauſe of all Diſ-

eaſes firſt; for every one has ſuch a Cauſe, whether the Practitioner hath Sagacity enough to diſcover it or not. And thus, when you are acquainted with the Cauſe, you may the better know your Intention in the Cure, without doing more Miſchief to the Patient in attempting a Cure unskilfully, than perhaps you could have done Good by his Cure, had you effected it injudiciouſly.

SECT. III.

Of the MORBUS PEDICULOSUS, *or the* Louſy Diſeaſe.

AS my Intention is, in every Deſcription I ſhall give of a Diſeaſe, to make it as plain and brief as I can, I ſhall in this loathſome one conſider it in its worſt State only; for whoever can cure the worſt and higheſt

higheſt Symptoms of any Diſeaſe, cannot fail of Succeſs in the loweſt.

This Diſeaſe is a Louſineſs in every Pore of the Body. There are three or four Sorts of Lice which the Body is liable to; but the ſmalleſt Sort, which are called *Pedicelli*, are the moſt difficult to cure: I have ſeen them as ſmall as Hair-Powder, and they increaſe to ſo great a Degree, and always neſtle themſelves under the Scales of the *Cuticula*, that they are from thence very difficultly deſtroy'd. They are produced, as all other Inſects are, from a Male and a Female, and their Increaſe in Number is monſtrous.

They, as all other Inſects do, ſeek for and find the propereſt *Nidus* where to produce and nouriſh their Species;

Species; and that is where the Blood abounds not with Salts in it ſtrong enough to deſtroy them; for they, as Worms in Childrens Bowels, are preſerved by weak Juices. This proves, that the common Saying, of giving the Child a little Wine to kill the Worms, is not often an improper one; for it is certain, that the ſame Children, who were both liable to breed Worms or Lice, ceaſed to be troubled with either, when they became Adults, and their Juices were more confirm'd.

Again, it is a juſt Obſervation, that old People, for want of a firm Conſtitution, when their Juices become ſo weak as not to be able to encounter with theſe Animals, are often eat up with them in ſpite of Art.

The Cure of them muſt proceed from one or both of theſe Methods. The firſt is, to deſtroy them, and then endeavour to ſtrengthen the Patient by good Nouriſhment, and by giving ſuch Medicines as may brace up the Juices; and they are ſuch as are frequently made uſe of in curing an Ague.

The Medicines that will kill them are to be applied either in the Form of an Ointment, or much rather in the Form of a Tincture drawn in rectify'd Spirit of Wine; for the Spirit alone (but more eſpecially, if mixed with ſome Spirit of Turpentine) will inſinuate itſelf further under the Scales of the *Cuticula* than any other Thing, and thereby deſtroy them. But the *Indian* Coal, the Staveſacre,

acre, and many other Things which are known to kill Vermin, being made a Tincture of in the Spirit, cannot but help forward in performing the Cure: And ſome of theſe conſtantly applied, will effect it.

SECT. IV.

Of the PRURITUS *or* Itch.

THE Itch is a watry Puſtule, occaſioned by an Inſect neſtling under the *Cuticula*. Thoſe who pretend to have ſeen it by a Microſcope, reſemble it to the Weavel bred in ſtale Oatmeal; and from thence attribute the Frequency of this Diſtemper to a certain People, on account of their living more on Oatmeal than others do.

This Inſect gets into the Skin, where it is moſt ſoft and tender; and therefore

therefore moſt frequently betwixt the Fingers, at the bending of the Wriſt, the bending of the Arms, or the clinching of the Ham, or where-ever the Cuticle is moſt unctuous; for in theſe Parts it gets a Lodgment moſt eaſily, till by degrees it finds a Paſſage under the Cuticle, and there cauſes that violent Itching which occaſions the Patient by ſcratching to tear off the Top of the Puſtule; from thence commences a Scab, with Ulcerations, *&c.*

Internals have nothing to do in the Cure; but as it is local, thoſe Medicines which will kill the Vermin in the preceding Diſeaſe, are proper in this; to wit, Mercury, Sulphur, Spices, *Cocculus Indicus*, &c. mixed in ſome Ointment: And ſome of

theſe conſtantly applied will perform the Cure.

SECT. V.

Of the Leproſy *called* ELEPHANTIASIS.

THE next Diſeaſe which I ſhall treat of relating to the *Cuticula*, and a very formidable one, is the Leproſy called *Elephantiaſis*. This being the higheſt Degree of the Leproſy, I ſhall treat only of it, and of the loweſt, omitting the intermediate Species, for the Reaſon given in the former Chapter; being ſatisfied, that if I can cure the greateſt Symptom, the leſſer will by the ſame means be ſubdued.

Moreover as Brevity, with Clearneſs of Reaſoning, is my Aim, I ſhall think I have done enough, if I have from ſome Degree of it given a *Ratio-*

nale

nale for what is to be done; though others may have ſhewn a larger Number of Examples, without any Reaſon given for their Practice.

Were I fond of being thought a great Reader, I have here a large Field for deſcribing from Authors the Difference betwixt that call'd the Leproſy of the *Arabians*, and that of the *Greeks*; and I could quote the Names of many, who have, I think, wrote very ignorantly about them; for I ſee very plainly, that very few who have written large Tracts, have been acquainted with all they treat of.

I ſhall deſcribe the *Elephantiaſis* therefore as taking its Name from the Likeneſs it has to the Skin of an Elephant, without telling you who

firſt ſaid ſo; and that it differs only from the milder Sorts of Leproſies in appearing ſomething rougher than they do, as not having ſo much of the Matter accumulated as to cauſe the ſame Deformity.

The Cauſe of this curable Diſeaſe proceeds from a Redundancy of the glewy Matter, which, as I before deſcribed, forms the *Cuticula*, and which, when puſhed too violently on the Glands of the *Cutis*, ſtagnates in them.

This, as one Cauſe, ſeems to me to proceed from too glutinous a Nouriſhment; for none are ſo liable to be afflicted with this Diſtemper as thoſe who live much on Fiſh. And what countenances me in this Conjecture is, that Fiſh-Glue or Iſinglaſs

is

is the ſtrongeſt and moſt pellucid of all others. Now ſuppoſe my Conjecture to be right, and that from an overloaded or diſtended Gland this falſe Secretion is begun, then of courſe there is an incipient or local Diſeaſe of the Leproſy-Train, of which the Tetter may be reckoned as one of the firſt or milder Claſs: And it ariſes frequently from a Check given to Perſpiration, only when the Patient was very hot, and his Blood in quick Motion. At ſuch a time a Check has been given by drinking a large Draught of cold Water or Limonade, or ſitting in too cold a Situation.

We find nothing ſo abhorred by Nature as the Return or Compulſion of any Juices of the Body back again after ſhe has rejected them as unfit for her Service. From hence the violent

violent Fevers of all Kinds have taken their Origin; and my Lord *Bacon* has ſaid, that the higheſt Poiſon which can be thought of ariſes from the Juices of Man's Body; and as a Proof of it, he inſtances the Plague. But to return: I now ſuppoſe, from this or any other Cauſe, a diſeaſed Gland of the Skin ſpuing out an inordinate Quantity of that Matter which cauſes the *Cuticula*. When once this is the Caſe, inſtead of its lying equal with the reſt of the orderly Scales of the *Cuticula*, it begins to diſcharge more of it there than it ought; and ſo it dries and looks whiter; and, for want of Moiſture, which the reſt of the *Cuticula* enjoys, from its cloſe Connection to the *Cutis*, where the conſtant *Effluvia* of the Body keep it in due Temper, theſe Scales begin to caſt off. This State is what I call one

of

of the mildeſt Species of the Leproſy; but after theſe Scales have taken deeper Footing, and, like the *Clavus* of a Corn, enter into the Gland which firſt formed it, by them drying on the Top or Surface; and ſo the Glands puſhing to diſcharge their Contents, till their Ducts are diſtended beyond their natural Diameters; it is no Wonder that they diſcharge from them at length even bony or other Secretions, which at firſt they were not intended to ſeparate.

I have before ſhewn, that the Blood has all the nutritive Properties of the Body in it, and whatever is to anſwer its proper Uſe is ſeparated by a peculiar Strainer: But as all Parts of the Body, when they become diſeaſed, will ſeparate quite different Juices from thoſe which they in a ſound

State

State were wont to do; from hence proceed the many Parts oſſify'd, which occaſion a Wonder to young Practitioners at firſt; but to old ones a *Luſus Naturæ* only teaches him to wonder how Nature can go on ſo long without producing more than it commonly does.

Having thus far reaſon'd upon, and I think ſhewn, the natural Cauſe of this Diſeaſe, the natural Cure muſt be to obliterate and wear out the firſt Footſteps of the Complaint, as is uſual in the Cure of a Corn; that thereby having diſcharged the outward Part of the Incruſtation, by diſſolving it, by wearing a ſoft Cerate and then ſcrapeing it, which you may do like ſoft Cheeſe, you go on in the ſame manner, till at length you recover the Tone of the Glands which firſt cauſed it by an undue Secretion.

This Method I have often practiſed with Succeſs, without giving any Internals. Theſe are Caſes not much obſerv'd in private Practice, but, from the Difficulty of their Cure, frequently met with in Hoſpitals.

Now altho' I promiſed not to be prolix nor too particular, either in my Deſcription of Diſeaſes or Medicines; yet for once I will give an Inſtance of what I am ſaying from a very extraordinary Caſe, which fell under my Care in *St. Bartholomew's Hoſpital.*

And this was in a Youth of about ſixteen Years of Age, who was more afflicted with the *Elephantiaſis* on the Soals of both his Feet, and on his Legs, than ever I ſaw before; the

Scales being thicker than a Half-Crown, and ſo hard and horny, that a Knife would hardly touch them; his Countenance very pale, and his Conſtitution ſeem'd to me to be much impair'd, as I judg'd, from the Matter which cauſed this Diſeaſe being confin'd, and from thence driven back into his Blood; and as it is my conſtant Practice to think of diſcharge-ing where I can every thing that Nature depoſits on the Surface of the Body, rather than by Purging be liable to lick it into the Blood, I order'd him to keep in Bed, and apply'd a mucilaginous Cataplaſm very thick ſpread over both Legs. After it had been renew'd daily for ſix or ſeven Days, I could, with my *Spatula*, ſcrape off the Incruſtation down to the Glands of the *Cutis*, with

as

as much Eaſe as I could have done if it had been Cream-Cheeſe. I ſtill continued my Cataplaſm, by which I cicatrized many of the worſt of them firmly, and beneath the Surface of the Skin, and left each *Cicatrix* as ſoft as any Part of his Skin which never was diſeaſed; during which I never gave him a Grain of any ſort of internal Medicine. He viſibly mended, not only in his Countenance, but he grew perfectly well in all reſpects, except in ſome Parts in which the *Cruſtæ* were not yet quite obliterated; and having continued the Poultice for a conſiderable time, thinking his Confinement would grow irkſome to him, I alter'd his Dreſſing for one I have often found effectual in the Cure of leſſer Degrees of a Leproſy; and that was, by applying a digeſtive Cerate in lieu of the Poultice.

Now that the Reader may underſtand what I mean by a digeſtive Cerate, I don't mean ſuch a one as the *Ceratum de Lapide Calaminari*, nor one made of Wax and Oil; both which being become ſuch Favourites of late to many who know no better than to think that they are as good as any, I will deſcribe the digeſtive one. I confeſs with them, that in their proper Places they are both very uſeful ones; the former as a Cicatrizer of ſome Ulcers at certain Seaſons, the latter on the tender Skins of many, after a Bliſter, or the like, where a Plaiſter is likely to excoriate.

The Difference wherein a digeſtive Cerate varies from the former is in ſome degree from an Adheſion in the digeſtive one more than in them.

That which I choſe to uſe in the finiſhing this Cure, which I perfectly did in a very ſmall time, I made of the *Emp. Demin. cum Sapone lb. j. Terebinth. Venet. unc. jv.* ; *m. lento Igne, f. Ceratum.* Which Cerate I daily applied, ſpread on Linen, till the *Pedunculi* of the Incruſtations were quite obliterated.

Now the Preference of the digeſtive Cerate before the two former in ſuch a Caſe as is here deſcribed, conſiſts in its Tenacity over the other two; for, if the Part had been dreſs'd with thoſe made of the *Lapis Calaminaris* or the Wax, they would not have inſinuated themſelves into the *Moleculæ* of the Skin as the digeſtive Cerate will, which I know by long Experience; and moreover they want the balſamic Part of the Turpentine to

invite

invite Nature to fill up ſuch Cracks as I know the other will perform.

I have been the more particular in this Caſe, becauſe, as I ſaid before, if the Cauſe and Cure of any great Diſeaſe be underſtood, the leſſer of the ſame Family will thence be more eaſily effected. I proceed therefore to ſhew the Cauſe and Cure of a Tetter or Ring-Worm, as it is one of the loweſt Claſs of this Diſeaſe, that thereby intermediate Caſes may more eaſily be cured.

SECT.

SECT. VI.

Of the Tetter *or* Ring-Worm.

THIS ſhews itſelf in a white Scurf on the Skin, which, as it ſpreads the Scurf, grows thinner in the Middle, and thickens on the Edges: It diſperſes itſelf on the Skin circularly, but not in a regular Form. It has the whimſical Name of a Ring-Worm given to it.

It may be cured three different Ways: The firſt is by Bleeding and Purging, and thereby withdrawing the Nouriſhment of the Body, that ſo it may die away. The ſecond, as it is local, is by applying ſome vitriolic Water, to dry the Surface, and conſtringe the diſeaſed Glands, which

ſeparated

ſeparated this Salt, and thereby to dry it away. The third, and what I in all ſimilar Caſes much recommend, is, to diſcharge this local peccant Matter, by giving a Looſe to it by the Application of a digeſtive Cerate, till the Glands come to their natural Tone again; and in both Caſes a little mercurial Ointment firſt apply'd may be of Service, as being a great Deobſtruent, and very penetrating into the Blood in general.

SECT. VII.

Of the Herpes Exedens.

I HAVE choſen to conſider next the Nature and Cure of the Ulcer called the *Herpes exedens*, becauſe of its Reſemblance to the former Diſeaſe

eaſe in its Progreſs: For tho' this differs from the Ring-Worm in its being a ſuperficial Ulcer, which the other is not, yet as they both make a Progreſs alike in travelling over the Surface of the Skin, I therefore have choſen to ſpeak of it in this Place.

This *Herpes* firſt appears in a Puſtule without much Pain, nor is there commonly a Slough found in it; and yet it never fails giving the Surgeon a greater Opportunity of exerting his utmoſt Skill in the Cure of it than moſt Ulcers do; becauſe, after the Puſtule breaks, it leaves the Edges of the Ulcer undermined by an *Ichor*, which continues to diſſolve the *Subſtratum* of the Skin under the Lips, without Inflammation on the neighbouring Parts, travelling up and down where this *Ichor* moſt affects the Parts,

till it becomes a moſt formidable Complaint; unleſs the Surgeon knows how to prevent its Incroachments.

As it muſt be conſidered as a local Diſeaſe, before he can cure it, whatever was its firſt Cauſe, no common Dreſſings can do any thing with it, becauſe the Texture and Conſiſtence of Lint, Ointment, and Plaiſter, with which common Sores are generally cured, will ſerve to keep in the *Ichor*, which is the Cauſe of the Eroſion under the Lips of it, which I have obſerved; whilſt it has healed in the middle in the Form of an Iſland, by the Help of ſome Mercurials added to the Medicine, with which the whole Sore was dreſſed.

The *Ichor* being the Cauſe of this Complaint, Internals will do little to remove it; but if a mucilaginous Cataplaſm

Cataplaſm be applied next the Sore, thereby giving Leave for the *Ichor* to come away as it is formed, it loſes its Force, as the Cataplaſm is blended and inſinuated into it. From hence I have known it to ſtop its Progreſs, and effect a Cure.

But if this fails (as frequently it will) ſome cauſtic Medicine ſhould be applied, beginning with one Lip firſt, and as that ſucceeds, with the reſt. Your Intention in this Practice is, by forming a Slough or Eſchar, to get beyond, and thereby deſtroy, the Secretions of this *Ichor*.

And here it may be proper to reconſider my firſt Syſtem of the Cauſe of Incarnation, and the forming of *Pus laudabile*; to which End I'll beg Leave to reſpite this Cure for a

while, and ſuppoſe an Eſchar formed by a Cauſtic quite through the *Cutis*. All Authors tell you it muſt be thrown off by Incarnation, or the granulating of young Fleſh; but as nobody ſo much as pretends to ſhew how and why the Thing is performed, I will ſuppoſe, that as, by the Cauſtic, the Blood-veſſels, as well as every Fibre which is in the Eſchar, are deſtroy'd, and conſequently the Circulation of the Blood can but come up to the Eſchar, and no further, for want of the Veins to carry off the Blood from the Extremity of the Arteries, the moſt minute of them, as well as the largeſt, muſt have ſome of the Globules begin to remain at their Extremities, not being able to return for want of a Vein, which cannot inoſculate with that Artery, till it comes to the next Branch,

Branch, below where it is obſtructed by the Eſchar. In Proceſs of Time, more and more Globules adhere to one another till Incarnation is effected; and then whatever Fluid paſſes thro' it muſt deſpumate, and become what is called *Pus laudabile*; and by this means the dead Part muſt be ſeparated from the living in all Caſes, whether cauſed by Cauſtics, or from any other Mortification.

To return to the Caſe under Conſideration: When an Eſchar is fixed on the Edge of the Sore, or *Herpes exedens*, beyond the diſeaſed Part which cauſed this bad Secretion, that Eſchar being caſt off by a ſound Gramulation, Healing of courſe will follow; for were not this Ulcer local, the reſt of the Body would not have continued in a ſound State. Many

Medicines

Medicines may be made uſe of to cauſe this Eſchar; but the Butter of Antimony ſeems to me the beſt for this Purpoſe: Therefore if the Surgeon finds one Part of the Sore heal, after the Method preſcribed has been tried, it naturally follows, that the other Part will heal by the like Practice.

SECT. VIII.

Of a foul ſcorbutic ULCER.

HAVING begun with ſuch Diſeaſes of the *Cuticula* as may illuſtrate the Nature of them from the Form and Nouriſhment of it, I have proceeded in a curſory manner to ſhew firſt the moſt troubleſome Ulcer of the ſmalleſt ſort of the *Cutis*; and that I may proceed as I began,

began, I will now deſcribe the moſt troubleſome one of the largeſt ſort, with ſome Directions towards its Cure.

That both I and the Reader may be excuſed conſidering the intermediate ones of either ſort, I am now to deſcribe one of the worſt ſort of ſcorbutic Ulcers affecting the Leg or Legs of a ſickly Man or Woman, who has the *Facies plumbacea* or *leuco-phlegmatia*, from his Juices in general being contaminated by the Returns of them into the Blood from the thicken'd Lips of the large Ulcer before ſpoken of, which, from the eroding Quality of its Matter, has quite eaten round the Leg. This Ulcer abounds likewiſe with large *Scirrhus's* and *Fungus's*, and ſends out monſtrous Quantities of a poiſonous

ous *Ichor*, which nobody can abide the Stench of, corroding where-ever it touches the ſound Parts of the Skin, although it be frequently cover'd with thick Scales, which are cauſed by the diſeaſed Secretions of the aforeſaid Ulcer.

Now what muſt an unexperienc'd Surgeon attempt to do with ſuch an Ulcer as this? If he attempts to digeſt it with any balſamic Medicine, whoſe Conſiſtence can direct the *Ichor* on the ſurrounding Skin, it never fails corroding it like *Aqua fortis*. From hence nothing was more common formerly, than for many Gentlemen of the firſt Characters to treat ſuch Ulcers as incurable, and either reject them, or proceed to Amputation, as ſoon as they were receiv'd into the Hoſpital. At

length I began to revolve in my own Mind whence this diſorder'd State of Nature proceeded; and after having, to my own private Satisfaction, accounted for a regular Incarnation, I was from thence I think enabled to account for a diſorder'd one, by imagining that the bony and horny Matter which impregnated the *Fungus*, and with which the Lips of the Sore became ſo horny, muſt ariſe from a falſe Secretion ſomewhere, either from too great Stricture, or too much Relaxation; which occaſioned me to try if lapping up the Leg affected in a ſuppurative Cataplaſm would not diſſolve ſuch bony and horny Matter, as eaſily as it can be done in *Papin*'s Digeſter; and to my very great Satisfaction I conſtantly find, that after the Application of my Poultice next to the Sore, and be-

yond every diſeaſed Part, I begin in a Day or two to get rid of the terrible Stench, by the Cataplaſm's drinking up the foul *Ichor* as it is diſcharged: Next follows an Appearance of Relaxation, and the Stricture begins to be taken off from every *ſcirrhous Fungus*, and its monſtrous Lips, without any of the Methods made uſe of, which are commonly preſcribed by Authors in general. There is no need of paring the Edges with a Knife, nor of reducing the *Fungus* by any cauſtical Application; but as I find the worſt of theſe terrible Ulcers gives Way immediately to this ſort of Treatment, and to no other, have I not great Reaſon from hence to reſt ſatisfy'd, that the Cauſe I have given for producing a *Fungus* is here demonſtrated? For if the Reaſon I have given for Granulation

tion be ever ſo true, if it reſted only on my firſt probable Conjecture, every body would have a Right to doubt of the Certainty of it; but, in my explaining the Cauſe of reducing theſe enormouſly diſeaſed *Fungus's*, not once by Accident, but conſtantly, I think the Principle is eſtabliſhed by which I perform it: And I promiſe never to fail doing it, provided my Patient be regular. And this I will effect by quite contrary Means than any I know of preſcrib'd in Surgery for that End; for every body who has written concerning it, has agreed to ſubdue *Fungus's* only by drying vitriolic or cauſtical Applications; whereas my Method is quite contrary to what is univerſally laid down, which is, that greaſy or mucilaginous relaxing Medicines do ever create *Fungus's*.

I readily own the Propoſition to be true, that they do ſo; for which Reaſon I make uſe of a mucilaginous Cataplaſm to relax theſe ſcirrhous diſeaſed Parts, and thereby make them diſcharge their Enemy. And in theſe Caſes I let the *Fungus* increaſe as much as it will. There can be no other Conſideration had about it, than that, in a regular well-digeſted Sore, there muſt be as much Granulation as can juſt occupy the Space it ſtands on. And this Granulation, when it begins to become firmer, and to reject any more of the Globule, the corny Matter of the Blood, which is the Cauſe of the *Epidermis*, and every *Cicatrix*, dry upon it; and ſo the Part is healed.

Now conſider a Sore of the ſame Part, ariſing from a diſeaſed Bone

ſpuing

ſpuing out a medullary and bony Diſcharge under the Granulation before deſcribed: The Conſequence muſt be, that this bony Matter mixing with the Granulation, it muſt thence partake of its bony Property, and thence likewiſe of its Texture, and, of conſequence, becomes of a bony Nature.

If the Original of this Ulcer ſprang from a diſeaſed Bone, that Bone muſt be laid bare, and treated as I ſhall ſhew, when I come to ſpeak more fully of the Bones. But I have before ſuppoſed, that bony Matter may be ſeparated by accidental Strainers, which Nature in a ſound State never intended for that Purpoſe. The ſame has been ſaid of other Juices; ſo that the Diſeaſes of any Part will ſerve to promote more Diſeaſes, as Soundneſs

in any Part promotes Health. If therefore the bony Matter here ſpoken of be what cauſes the *Fungus*, do but juſt get rid of it, and it leaves on the Part its own natural Granulation; ſo that, till all Points in a Sore are equally granulated, ſome are weeping under thoſe which are firſt incarned, and ſo every *Fungus* is created.

I think I have fully explained this *Phænomenon*; and if it be underſtood, it will be no Wonder, that tho', in order to get rid of any of the peccant Matter here deſcribed, you, by the relaxing Medicines, increaſe your *Fungus* for a Time, yet, on my own Experience, I never think of deſtroying it by Vitriol, or the like; but rather chooſe to give a full Looſe to the Parts, finding them healing faſter from the Edges, when the Strangulation

lation has been taken off, by ſweating out that which occupied Spaces which did not belong to it, rather than by Art, cropping off the Top of the *Fungus* by Vitriol, *&c.* and thereby forcing it to heal, whilſt it remains callous and diſeaſed.

Before I leave this Subject, I ſhould be unjuſt to it, if I did not remark, that when theſe terrible ſcorbutic Ulcers are cured by this Method, you may perceive, during the Cure, the Patients Countenances, which were generally of a ſqualid Hue before, to be clearing up daily by the Diſcharge from the Sore, till they come to a perfectly healthy Appearance. And this being done without any internal Medicine, I lay it down in all Caſes, that it is better for the Patient to diſcharge any peccant Matter externally from

from the Part which Nature laid it on, than to retract it into the Blood, by Bleeding, Purges, or other Evacuations; for by this means this Matter is often tranſlated to the Lungs, or ſome other noble Part: For it is a known Maxim, that *ab extra intra redire malum eſt.*

I have been very circumſtantial in this Chapter, becauſe I think it clears up my firſt Propoſition; which was, to ſhew the Nature of Matter, Granulation, and the Increaſe of *Fungus's.* And though my firſt Deſcription of them may be ſufficient to ſhew, from Probability, that I am on the Side of Reaſon concerning them, I think, after I have proved the Facts related in this Chapter of the ſcorbutic Ulcer, it amounts to a Proof, if any thing can, that my Conjectures concerning

concerning them are well-grounded. I ſhall give but one more Circumſtance to illuſtrate this by, and that is from my conſtant Obſervation on the Appearance theſe ſcorbutic Ulcers make towards the End of their Cure, when the unnatural Secretions have been ſweated out of them; then you may always perceive them looking as mild and gentle, as before they look'd fierce and implacable; for then they are cloathed with their natural Granulation only: And from hence they naturally cicatrize from the Reaſons before given, as eaſily as a Burn gerally does.

CHAP. VIII.

SECT. I.

Of the MEMBRANA ADIPOSA.

AS I was under a Neceſſity, in deſcribing ſome of the Diſeaſes relating to the *Cuticula*, to deſcribe the *Cutis*, as ſome of its Secretions appear to become the Diſeaſe of the *Cuticula*, in like manner as the *Membrana adipoſa* lies next under the *Cutis*, and as its Uſe is chiefly to provide that Unctuouſneſs which the Skin would ſtand in need of, were it abſent, I ſhall deſcribe the *Membrana adipoſa*.

The *Membrana adipoſa* lies under the *Cutis*, and is compoſed of infinite Cells like Net-work, which open

every Way into one another. It is ſo formed as to receive into it an oily Fat, with which, from time to time, the Skin is ſoftened; as, from the Heat of Weather, or outward Accidents, it may be in need of it to keep it in a proper Temperature. This Membrane is likewiſe the Seat of the Dropſy called the *Anaſarca*; the Cauſe of which Diſeaſe proceeds from the lymphatic Ducts diſcharging their Lymph into this Membrane, from the Blood's becoming too poor, and overcharged with watry Parts, either from the Kidneys not doing their Office, or the Pores of the Skin being obſtructed, or both: When this is the Caſe, you may prove what I have ſaid, that theſe Cells of the Membrane open freely like a Sponge into one another, by your being able to preſs the Water contain'd in it

every Way under the Skin, as you may impreſs Dough. Moreover if you make an Inciſion down to the *Membrana adipoſa*, it will diſcharge the Water from all Parts of the Limb it affects.

The *Cutis* having before been deſcribed, as being indued with an infinite Number of Blood-veſſels, Nerves, and Glands, to ſeparate the Lymph, and other Secretions, I have before ſaid, that where-ever there is an Artery to carry the Blood, there muſt be a Vein to return, and a Nerve always accompanies them. This will raiſe in our Minds a Doubt of their Multiplicity, I am perſuaded; but if it does, I can eaſe that Doubt, when I conſider, that you cannot enter the Skin any-where with the ſmalleſt Point of a Needle where it meets not Blood,

Blood, or where it gives not Pain: Which will ſhew, that the Artery which brought the Blood, and the Nerve which felt the Pain, are preſent with the Point of the Needle, and would be ſo in all Parts of the Body, where-ever the Experiment ſhould be made.

Since then the Body of Man is made up of ſuch an Infinity of Conduit-Pipes, it is a greater Wonder that they are not oftener diſorder'd, than that they ſerve the ſeveral Purpoſes they were made for.

CHAP.

CHAP. IX.

SECT. I.

Of WOUNDS.

I HAVE here treated of the *Cuticula*, the *Cutis*, and *Membrana adipoſa*, in ſome degree as Anatomiſts generally do, dividing them into three diſtinct Membranes: And what countenances this Appearance of their being ſo divided is the Method uſed to ſeparate each from the other; for, by the Application of a hot Iron to the *Cuticula* of a dead Perſon, you may cauſe it to ſeparate from the *Cutis* as a Bliſter will cauſe it to do on a living one: The *Cutis* may alſo, by flaying it with a Knife, be ſeparated alſo from the *Membrana adipoſa*.

Now,

Now, as I promiſed Brevity, with as much Clearneſs as I could, I ſhall not therefore, as Anatomiſts uſually do, diſplay every *Fibrilla* of it; but chooſe rather to conſider this Covering of the Body in one general View, and as it appears to be contriv'd for various Uſes. In this Light, notwithſtanding that Anatomiſts have allow'd of a *Cuticula*, a *Cutis*, and *Membrana adipoſa*, yet let any one take a Piece of the *Cutis* of a fat Perſon, and he would be inclined to believe, that the *Cuticula* is but a Part of the Skin, being a Subſtance of a horny Nature, ſeparated out of the Glands of the Skin, as a Covering of the Nerves, to enable them to bear the rude Touches of hard Bodies; and at the ſame time he would think, that the Uſe of the *Membrana adipoſa*, which is inſeparable, after all, from the

the *Fibrillæ* of the Skin, is to lubricate the Skin with its oily Fat, whenever it ſhall ſtand in need of it, after it has been injured, either from a blaſting Fire in the Air from without, or from ſome undue Separation or Secretion of its own Glands from within. I proceed now to treat of Wounds of the Skin; and firſt,

SECT. II.

Of Wounds *made by a* keen Inſtrument.

AS I have ſhewn, the Skin ſo abounds with Blood-veſſels, as that no Part of it can be enter'd with the Point of a Needle, but Blood will appear, ſo every inciſed Wound muſt exhibit an Infinity of Blood-veſſels, which are divided in it: If

If therefore the Skin be wounded only, without going down to the *Membrana adipoſa*, the Blood-veſſels will emit into the Wound ſuch a Quantity of the Globules of the Blood, as, by their balſamic or adheſive Quality, if the Wound be ſoon bound up before the Air has taken hold of them, or its Fire, has not alter'd their Texture, it ſeldom or never fails of healing by Agglutination, tho' the Wound be very large.

What conduces often to this Method of Cure is, firſt, applying to the Wound *Muſitanus*'s, or what is called the Frier's Balſam, which at once ſecures the Air from ſeizing on the Globules of the Blood, which are ever liable to be affected and diſſolved when a Wound lies open any time to it.

By the Experience of this Practice I am taught, whenever I take off a Limb, if the Membranes have not ſuffer'd higher up than what appears to View, to apply a Varniſh made with Gums and Spirit of Wine; which ſerves not only to criſp up and ſtraiten the weeping ſmall Veſſels, but it prevents the Air from taking hold of the weaker Parts of the Membranes, and cauſing them to ſeparate deeper than otherwiſe they would do.

On the whole, inciſed Wounds, if bound up in time, will heal by one Intention, tho' they may be very large, provided they lay not open the *Membrana adipoſa* to the Air; for the Marrow of the Bones, or that of the *Membrana adipoſa*, ſoon becomes putrid, from the Air's being admitted to it; which Air, from its Energy

Energy and Force, as it is the chief Officer of PROVIDENCE to actuate all created Nature by, when in its proper Place, ſo, out of it, it becomes a violent Enemy to her.

I have in like manner before been ſhewing, that the mildeſt Secretions of the Body, whenever they have been forced, or by Accident received into other Juices they were not intended to join with in the ſame Body, become a rank Poiſon.

The Air, when it is received into the Lungs, is of that ſalubrious Nature, as to mix with the Blood every time the Lungs operate in Reſpiration, renewing thereby its Vermilion-Colour, and invigorating it ſo as to give Nouriſhment to the ſe-

veral Parts it is allotted to ſupport, both with Strength and Spirits.

Now, as the Air cauſes ſuch a Change on the Blood every time it joins with it in the Lungs, it alſo greatly affects it when out of the Body; Inſtances of which we may ſee in the Fleſh of all dead Animals; for, if you obſerve the Meat in the Butchers Shambles in a hot Day, you will perceive it not only look dry, but as if it had been burn'd in the Fire.

To give a greater Proof of the Air's influencing the external Parts of the Body, let any Surgeon open a cold Tumor, which was cauſed by Congeſtion, it ſhall, on its diſcharge-ing perhaps a little Curds and Whey, appear to have no Signs of Inflam-

mation

mation for a few Day: But he muſt have had but little Buſineſs, or have been a ſlight Obſerver, who knows not, that not only very great Inflammations, but very dangerous Fevers, uſually follow the Opening of theſe cold Tumors, which are kept quiet generally till they are expoſed to the Air.

I have endeavour'd here to give the Practitioner ſome Hints concerning the Influence of the external Air on the Blood, becauſe I have known an Author advance, that, in his Opinion, the Air could not influence a Wound, or make it the worſe for being expoſed to it. Now, if what I have endeavour'd to ſhew be true, then a Surgeon ought not only to be careful not to expoſe Wounds in general to the Air, but, as ſoon as may

may be, to defend them from it, by applying ſuch Digeſtives as may ſecure the wounded Part from the open Air, till Nature relieves herſelf, by ſupplying her own Wants: For it has ſo pleaſed God Almighty, that he has not only moſt wonderfully form'd this World as coming out of his Hands in great Order and Perfection, but has alſo been ſo merciful to all his Creatures, as to provide them with Aſſiſtances proper for their Support, from Nature, without which they muſt have periſhed from every ſmall Accident. And tho' the Skill of a good Surgeon muſt be of great Conſequence to Mankind, it muſt ever be conſider'd as well in doing his Patient no Harm, as in doing ſome Good; for, generally ſpeaking, a Surgeon is but a Scavenger to Nature: For, if the various Parts of

the Blood did not ſupply the many Loſſes of the Body, what could the Surgeon's Art do for him?

Thus I have endeavoured to ſhew, that, by the Globules uniting in an inciſed Wound, which has been kept from the Air, Nature only does the Work; but, as Wounds are of various Sorts, I ſhall proceed to ſpeak,

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SECT. III.

Of Lacerated Wounds.

EVERY lacerated Wound, or Wound made with Contuſion, has not only ragged Parts, which the Blood-veſſels for a ſmall time may preſerve with Life, but ſuch Wounds have likewiſe frequently, from Contuſions happening at the ſame time, a Quantity of Blood lodging under the

the Skin, or betwixt the Membranes, Tendons, or adjacent Parts of the Wound. Now, if what I have ſaid, be admitted, that the Air is liable to affect the Juices of the Body, by cauſing a Putrefaction in them, the chief Care of the Surgeon, when he has the Cure of ſuch Wounds as are here deſcribed, ought to be, firſt, to apply *Muſitanus*'s Balſam to the leſſer Sort of lacerated Wounds; for thereby this Balſam, which is made of Gums diſſolved in Spirit of Wine, will ſerve as a Varniſh to cover ſuch ſmall Filaments, or lacerated Parts of the Wound, as the Air without it would immediately take hold of and mortify; and ſo they would become what Farriers call Setfaſts, or what Surgeons call Sloughs, ſometimes taking ſuch deep hold of the membranous Parts, as to endanger the Life of the Patient.

The

The Air moreover, in theſe Wounds, does great Injury, by affecting the contuſed or extravaſated Blood, and rendering it putrid: For where-ever it is found, that extravaſated Blood, which always lies quiet till the Air comes to it, is expoſed to the Air, it acts upon it as Fire does on Gun-powder, every Corn of which, when it takes Fire, blows up its Neighbour. In like manner, when an *Ecchymoſis* is by Miſtake opened (which it never ſhould be), one Particle of Blood being contaminated by the Air, it taints the next; and ſo, as far as the Blood lay, the Sore of conſequence extends itſelf.

This Doctrine will ſhew why a compound Fracture differs ſo greatly from a ſimple one: For, tho' the Bones in a ſimple Fracture be ever

ſo much macerated, it ſeldom or never, with proper Care, fails of doing well; but if the Skin be broken ever ſo little, if the Air be admitted to ſome extravaſated Blood, it makes aterrible Difference betwixt one Fracture and the other; which every knowing Practitioner finds there is, from the Cauſes before given.

But to return to the lacerated or contuſed Wound; if, by Neglect or otherwiſe, you find ſuch a one in a crude State with large Sloughs, what is the mechanical Cauſe whereby they are made to ſeparate from the ſound Parts? My Anſwer is, From Nature's puſhing the Globules of the Blood on to the Extremity of the ſound Parts, till they ſo accumulate as to become incarnated, and from thence the dead Parts of Neceſſity

are ſeparated from the ſound. This may be conſider'd as the Operation of Nature only; but, ſince Nature ſtands in need of Art ſometimes to aſſiſt her in her weak State, it may be found proper in theſe Sores to uſe ſome warm balſamic Application to help off theſe Sloughs, which ſhould be compoſed of the ſame kind of Terebinth or Gums as are found in *Muſitanus*'s Balſam; but with this Difference only, that as, in *Muſitanus*'s Balſam, they are diſſolved in Spirit of Wine, the better to diſpenſe the Gums as a Varniſh moſt intimately on every Part to defend it from the Air, ſo, when they are to act as a Digeſtive, and are to aſſiſt Nature to caſt off thoſe Parts which are become her Enemies, they muſt be diſſolved in *Ol. Lini*, or the like, the better to mix with ſuch Acrimony as

the Sloughs may have cauſed, and to help them to ſeparate from the ſound Fleſh. By the Gums and Oil becoming ſo thin a Balſam, they the more eaſily penetrate, warm, and relax the ſound Parts, ſo as to promote Granulation.

It has been aſſerted, that dry Lint is as good a Digeſtive as any: If what I have ſaid of the Cauſe of producing Matter be true, I cannot ſee that dry Lint has any thing to do with it.

Having given ſuch Hints as may be of Uſe to the young Surgeon concerning contuſed Wounds in general, I ſhall proceed, and conſider a Wound made by Gunſhot: And altho' it is a contuſed or lacerated Wound; yet I think it ſo far differs from the reſt

reſt of that Claſs, as to induce me to give my Thoughts upon it.

SECT. IV.

Of Gunſhot Wounds.

AS Gunſhot Wounds are made with a Bullet, or ſome obtuſe Body, they muſt be treated as contuſed Wounds are, for the moſt part; but as I have frequently ſeen them have an Appearance or Face which I never obſerved in any other contuſed Wounds, I am willing, if I can, to account for it.

If any one obſerves a Gunſhot Wound given to Man or Beaſt, he will find ſuch a Blackneſs about it, as I have never ſeen from one made by a Hedge-ſtake, or any ſuch-like Thing;

Thing; beſides, I have often obſerved a ſort of putrid Matter diſcharging from them not unlike Yeſt; which I never have ſeen produced from any other contuſed Wound. It muſt nevertheleſs be acknowleged, that ſome Gunſhot Wounds will heal without any of theſe Symptoms, and a Bullet has lain in the Body of a Patient for many Years after the Wound was given.

The Reaſon to be aſſigned for this Difference in the Appearance of ſuch Wounds, may ariſe from the Bullet, or other Material, the Wound is made by, having a Poiſon ſent in with it, from the Exploſion of the Gunpowder: And the Reaſon why it don't always happen, may be from the Wound's being made at a great Diſtance from the Gun; ſo that the Bullet

Bullet may have loſt the *Effluvia* of the Gunpowder, by its paſſing ſo far through the Air; whereby it was cleared from it.

This Notion may, and I ſuppoſe will, be ſlighted, by ſuch as have not obſerved the Symptoms I have been ſpeaking of; but if it ſhould, I have great Odds on my Side, that it will come from thoſe who never will obſerve any thing new themſelves, but how to find new Faults.

This Opinion having not been ſtarted before, that I know of, it may be queſtioned, how it is poſſible that a Poiſon ſhould be the Cauſe of ſuch Symptoms? But they who conſider how ſmall a Quantity of Venom there is in the Point of a poiſoned Arrow to cauſe ſuch direful Symptoms, and

even

even Death, by the Venom diſperſing itſelf into the Blood, or how ſmall a Quantity of morbid Matter will ſet afloat the Small-Pox through the whole Maſs of Blood, need not wonder at my Conjecture.

As I intend to ſpeculate only on ſome Things relating to Gunſhot Wounds, in a Manner which I have not obſerved in any Author, ſo in this, as in other Caſes, I ſhall refer my Reader to the Practice of any one who has written largely on that Subject for the operative Part; it not being my Intention, as I ſaid in the Beginning, to make this a practical Treatiſe of the Art of Surgery. To proceed therefore: Notwithſtanding Gunſhot Wounds are contuſed ones, yet they differ from all others; or elſe, why ſhould the Jeſuit's Bark be

be ſo much recommended in the Cure of Gunſhot Wounds in particular more than in common ones?

All that I ſhall now offer towards the Cure of Gunſhot Wounds is, that the Surgeon ſhould lay open the Orifice of every Wound that is made by Musket-Shot, as ſoon as he ſees his Patient, provided there be nothing to prevent it, and dreſs the Wound with as mild balſamic Dreſſings as can be thought on; and be ſure not to keep in any Matter, by crouding Doſſils, or making too ſtrait a Bandage on the Wound.

As to the great Influence the Bark is ſaid to have in the Cure of theſe Wounds, I own I never could prove it to be ſo effectual, either in Gunſhot Wounds, or Mortifications, as ſome

declare it to be; yet, notwithſtanding that, I never refuſe the Uſe of it where it is propoſed, nor will I adviſe others ſo to do; becauſe, if it does no Good, as it is a Bitter, and a kind of Alexipharmac, it may be of ſome Service otherwiſe.

Thus I have given my Thoughts concerning Wounds; and as I intend to proceed in the Method I firſt propoſed, of beginning with the Diſeaſes of the *Cuticula*, and from thence deſcending till I came to thoſe of the Bones, I ſhall think it proper, before I leave the *Cutis* and *Membrana adipoſa*, to deſcribe the Cauſes of ſome Diſeaſes relating them.

In order to this, it will be neceſſary for me to eſtabliſh ſome Principles, which were for many Ages maintained

tained and agreed to by the Antients, though by the Moderns as much decry'd as I have ſeen the Doctrine of an elementary Fire to have been, which now is, or may be, as clearly ſhewn to exiſt, as that Water does.

What I would demonſtrate in this Place is, the Tumors ariſing from the four Principles of *Blood*, *Phlegm*, *Choler*, and *Melancholy*. Now, though I have heard ſome triumphantly deſpiſing, and endeavouring to deſtroy theſe Principles (but I think in vain), they would do well to remember, that they have eſtabliſhed nothing in their Place: Which occaſions me once more to remark, what I have ſaid before, that, whether we can find out the Cauſes of Diſeaſes or not, it is as certain that they exiſt, as that the Seeds of the

Small-Pox will never produce any other Diſeaſe than its own: And this is as certain, as that a Carrot-Seed can never produce a Turnep. I ſhall therefore now proceed to ſhew the Diſeaſes relating to them in their Order; and firſt ſhall deſcribe thoſe proceeding from the Blood.

CHAP.

CHAP. X.

Of Tumors *proceeding from the* Blood.

SECT. I.

Of the Aneuriſm.

THE Aneuriſm proceeds from a Rupture of the Artery; which is the Veſſel that carries the Blood from the Heart, as the Vein brings it back again to it. This Rupture may be either partial or total. The partial one is, when the internal Coat of the Artery is broken, and the outward Coat at the ſame time ſo diſtended, as to retain in it a very great Quantity of Blood. When this is the Caſe, it may be reſtrained by the Patient's wearing a laced Bandage upon it, which has been done for many Years; and thereby the Limb remained

remained uſeful. There are two other Kinds of Aneuriſms; the firſt ariſes from a total Rupture of the Artery, ſo that the Blood becomes extravaſated; the ſecond of theſe complete Aneuriſms proceeds likewiſe from the Artery's being opened by an unskilful Bleeder, or the like Accident. In both which Caſes there muſt be no Time loſt, before the Surgeon opens the Tumor, and ties up the Artery *S. A.*

SECT. II.

Of the Ecchymoſis.

ANOTHER Tumor proceeding from Blood is called the *Ecchymoſis*, which is an Extravaſation of Blood under the Skin, frequently occaſioned by a ſtrained Ancle, from the

the Rupture both of Veins and Arteries, or by a Contuſion on any Part.

In the ſtrained Ancle, the Surgeon's firſt Intention is, to reſtrain the Blood from flowing through the lacerated Veſſels, that thereby there may not be a very great Quantity of the Blood extravaſated. To prevent which, a cold Charge with Bandage may be applied, for the firſt or ſecond Dreſſing, but by no means any longer: For, when you come to your ſecond Intention, which is by the *Theriaca Londinenſis*, or ſuch-like rarefying Applications, to let the extravaſated Blood perſpire through the Skin; then, I ſay, if you keep on the cold Charge, or put on an aſtringent Plaiſter, they only ſerve to do great Miſchief, by locking in the extravaſated Blood,

which ſhould always be ſuffered to perſpire away, before your ſtrengthening Plaiſter be applied.

So far as I have gone on this Subject, I think I have proved one of my Points, that there are ſome Tumors ariſing from Blood: It may be, ſome Authors have deſcribed a *Phlegmon* from its Colour being deeper than that of an *Eryſipelas*, as proceeding from Blood; of which I ſhall ſpeak in its proper Place.

But firſt, I ſhall endeavour to ſhew what Diſeaſes may be ſaid to proceed from Phlegm.

SECT.

CHAP. XI.

SECT. I.

Of Diſeaſes *proceeding from* PHLEGM.

I SHALL firſt endeavour to deſcribe the Nature of Phlegm, before I proceed to ſhew the Diſeaſes ariſing from it.

Phlegm is by Authors called a ſlimy Excrement of the Blood; but, to give the moſt intelligible Deſcription of it, I take it to be that cold glutinous Part of the Blood called Size, which appears on the Surface of ſome diſeaſed Blood, when cold: That which looks florid, and whoſe Globules are largeſt, with a proportionable Quantity of *Serum* in it, without any of this glewy Matter on

the Surface, is eſteemed the moſt ſound and healthy.

I apprehend the primary Cauſe of this Phlegm, or Sizineſs of the Blood, proceeds from an Obſtruction in ſome of the glandulous Secretions: For the Uſe of all the Glands is to ſeparate from the Blood ſuch Juices as Nature ſtands in need of: For inſtance, thoſe of the Noſe are to ſeparate juſt ſo much *Mucus* as will ſerve to keep the Noſtrils ſoft, and prevent them from becoming dry like Parchment; which would quickly be the Caſe, from the continual Flux and Reflux of the Air through them, were it not for a due Quantity of this *Mucus* to keep them ſoft and pliable. In like manner, were the Kidneys, the Ureters, and *Urethra*, not to have a *Mucus* conſtantly ſecreted to line them withal,

the very Urine, which they were made to convey, would deſtroy them.

Thus all the Ducts of the Body have a *Mucus* ſeparated to defend them; and yet, whenever this very *Mucus* ſuperabounds, which was at firſt deſigned for the Preſervation and Eaſe of the Part, it becomes a Diſeaſe.

I could give Inſtances of this in many Caſes; but firſt I think it neceſſary to ſhew the Cauſe or Origin of Phlegm, or Sizineſs of the Blood.

This Sizineſs generally ariſes from taking Cold; the Manner of which is as little underſtood perhaps as any thing; for, tho' every one knows that Colds proceed from receiving the Air into our Bodies improperly, yet

few conſider the State of the Air as abounding at one time with all the Means of reſtoring and preſerving Health to us, and all the reſt of the Creation; and at another as containing in it the Cauſes of Plague, Peſtilence, and Famine, by its occaſioning Death to Cattle, and Blights to all the Fruits of the Earth.

It is therefore no Wonder that we are ſuſceptible of ſuch Evil from it, by its ſending into our Blood at unguarded Seaſons ſome of its deadly Poiſons. When this happens, the Quantity is not the Thing; but the Genus or Species of it is to be conſider'd; ſince any one may ſee how ſmall a Quantity of Matter will inoculate the Small-Pox, and convey it through the whole Maſs of Blood.

Whenever,

Whenever, therefore, a Cold is taken, that is, when the Air has affected the Blood with ſome heterogeneous Particles which were in it, the *Stimulus* they cauſe in the Blood is called a Fever; and as the Poiſon by which it is cauſed is more or leſs of a deadly Kind, the Fever is more or leſs peſtilential or dangerous. If Nature, in her Struggle to throw off this peſtilential Matter, depoſits it on the Glands of the Kidneys, the Lungs, the Noſe, or the Bowels, ſo as that they are not obſtructed thereby, a Diſcharge of this peccant Matter enſues, and ſaves the Patient. But ſometimes the mucous Glands of the Noſe or Lungs are ſo overloaded, as to be unable to diſcharge it: And at ſuch times, I apprehend, as the Bile is liable to overflow into the Blood, tinging it everywhere

where as in the Jaundice, for want of its natural Paſſage through the Gall-Duct (for when it was ſeparated into Bile from the Blood, it muſt get on ſomewhere) ſo the *Mucus*, when ſeparated from the Blood, if it get not off from the Glands through its proper Ducts, will of courſe get into the Blood.

And from hence I apprehend Phlegm, Sizineſs, or the *Pituita* of the Blood proceeds; and as this may abound more or leſs in the Blood, ſo quite different Diſeaſes may ariſe from it. As an Inſtance of this, when the Blood is perfectly ſound, and in a vigorous State, all the Functions of the Body are performed accordingly: In the Inſtant of its beginning to be attacked by the Intanglements of ſome of this ſizy Matter, Nature

in

in her full Strength begins to be diſorder'd, and by her Endeavours to get rid of her Enemy, Inflammations ariſe.

Here I conſider Phlegm as getting only into the Blood before its Texture be quite broken; but it may alſo be conſider'd as having impregnated the Blood to ſuch a Degree, as to become ſo great a Portion of it, that it thereby is quite debaſed. And hence ſeems to ariſe the depraved State of the Blood, when, on letting ſome of it out, it looks like Beef-Brine; the Globules being much broken, and the Number of them few, in proportion to a thin Size, which, in their ſtead, make up the reſt of the Fluid; for in this State it can hardly be called Blood; but it is become a poor cold phlegmatic Fluid;

from

from whence proceeds the Train of ſcrophulous Diſeaſes, among which ariſe the Tumors call'd the Cold Swellings, or Tumors by Congeſtion.

Having ſhewn theſe different States of the Blood, I ſhall endeavour to explain the Difference betwixt Tumors by Fluxion, which are hot, and Tumors by Congeſtion, which are cold; and as the *Phlegmon* is of the deepeſt Red of the inflamed Tumors, I ſhall firſt treat of that.

SECT. II.

Of the Phlegmon.

A *Phlegmon* is an inflamed Tumor not circumſcribed, as if it aroſe from ſome Gland; but generally it poſſeſſes a large Portion of the Skin; for Inſtance, either of the Cubit, the Leg,

Leg, the Shoulder, or the like: It is commonly of a deep red Colour, and, in that, eſſentially differs from the *Eryſipelas*, the pathognomonic Symptom of which is a pale Inflammation, with a Tincture of the Bile in it; but the *Phlegmon* is, properly ſpeaking, no more than a Name for a great Inflammation not otherwiſe diſtinguiſhed. Now, as I ſhall endeavour to ſhew the Cauſe of the *Eryſipelas* to be very different from that of the *Phlegmon*, I ſhall in the firſt Place ſhew the Cauſe of a *Phlegmon*.

In order to which, I need only refer the Reader to my Reaſons given juſt now for the Inflammation of the Blood occaſioned by a Cold; for, during this Struggle in Nature to exonerate herſelf of her Enemy, which I call Phlegm, Size, *Pituita*, or the

like, there being no Way to do it but on the Surface of the Skin, or where-ever Nature finds the eaſieſt Vent; it is natural to conceive, where-ever this Sizineſs is depoſited, many Globules of the Blood will be admitted with it; and, if they fall on the *Pleura*, it becomes a *Phlegmon* called a Pleuriſy; and in like manner it becomes a Phlegmon of every other Part, which Part gives a different Name to it.

As a *Phlegmon* is of a deeper Colour than any other Inflammation, ſo that Colour muſt proceed from thoſe Parts of the Blood which are of that Colour, and they are the Globules of it; and from hence the Antients conſidered a *Phlegmon* as proceeding from Blood. Now, when this Inflammation is become very tenſe,

ſo

ſo that no Circulation can any longer be maintained in the Part it affects, the Veſſels and Fibres of it give way, and burſt; and, of courſe, theſe inflamed Juices are thereby become extravaſated; the lacerated Parts, having their Blood-veſſels thus deſtroyed, thereby become Sloughs fit to be caſt off by the Granulation of young Fleſh at the Extremity of the Blood-veſſels which are not deſtroyed. And this may demonſtrate, that all Matter is produced from one and the ſame Cauſe, as well that from an Impoſtumation, as that from an open Sore.

All other Parts of the Blood are more perſpirable than Matter, becauſe every Particle of Matter is a real Bladder or Bubble of Air; and it thence becomes very difficult for it to eſcape. This may ſhew why the

firſt Fluid, which proceeded from the ruptured Veſſels in an incipient Impoſtumation, may in time perſpire, and leave behind it only what is called digeſted Matter; ſo that, when theſe Tumors are opened before Granulation be quite formed, and the firſt Fluid not perſpired away from the more perfect Matter, you then find the Sore continue undigeſted, and in a crude State, for a long time; that is to ſay, till Granulation is formed; which is always the longer for having opened the Tumor too ſoon, becauſe the Air prevents its coming to Digeſtion ſo ſoon as it would otherwiſe have done. It is better to ſuppurate theſe Tumors always as they proceed from peccant Matter in the Blood, than attempt to diſcuſs them; and, when they are opened, they ſhould be dreſſed with

ſuch

ſuch a Balſam as I formerly recommended, which ſhould be compoſed of the moſt fragrant Sorts of Gums or Turpentines, let down with good Oil to a thin Conſiſtence; they ſhould be ſuch as the *Gummi Elemi*, the *Straſburgh* Turpentine, the Balm of *Gilead*, the natural Balſam, *Storax*, and the like. A Balſam made of ſome of theſe, mixed with Oil, may help Nature to complete a Cure, by throwing off the injured Parts by the Aſſiſtance of Granulation. If to this Balſam you add ſome eſſential Oils, ſuch as the Oil of Cloves, or that of Amber, or Oil of Turpentine, as the fetid or putrid Matter lodged in the Sloughs of ſome of theſe Impoſtumations are ſometimes ſo acrid, as to tincture your Probe on the immediate Touch; and as it will alſo excoriate whatever Parts

it touches; ſo the Warmth and Fragrancy of theſe Oils ſeem to me to be beſt able to ſubdue the poiſonous *Ichor*, and convey thereby the Balſam to the living Parts.

I think, from what I have now ſhewn, that the Phlegm here ſpoken of being depoſited on ſome particular Part, the Globules of Blood may be thereby caught and retained in it as in a Net; and thus, when this Phlegm quite prevails over the Globules of the Blood, and operates alone, it may be the Cauſe of all cold Tumors; but, when mixed with the healthy and vigorous Parts of the Blood, this hot or inflamed Tumor called a *Phlogoſis* or *Phlegmon* is likewiſe produced, and may originally have obtained its Name from it.

Having conſidered what may be the Effect of Phlegm, when it does not

not ſo far abound in the Blood as not to have quite deſtroyed its Texture, I ſhall proceed to ſhew the Conſequence of it, when it is ſo far become predominant, as to be the chief Governor in the Gariſon.

Whoever obſerves the different Appearances the Blood of the ſame Perſon makes at different times, may be inclined to think with me, that the Diſtinctions I have made have a great Probability in them; for, after catching Cold, on the firſt letting Blood, you will find the Globules of Blood appear as florid as if the Patient had received no Cold; but yet, on its ſtanding awhile, ſome Size will appear to be here and there interſperſed in it. This is the State of it I have been ſpeaking of, that is, when it may produce an Inflammation.

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The next State of it is, when, on letting Blood, it appears not to have its Globules fair nor florid in their Colour; but its Parts float as if ſome Oil had been mixed with them, and ſeem inclinable to ſeparate from each other; and, when it begins to grow cold, it appears to become one Quantity of Size or Phlegm, without any red Colour belonging to it, as though its Globules had been diſſolved, or abſorbed into the ſizy Parts. Now, when it makes this Appearance, I then, with many of the Antients, ſuppoſe the Maſs of Blood to be in a depraved State; and from hence there ſeem to ariſe all cold Tumors, or thoſe which are called Tumors by Congeſtion; which induces me to treat of them in their Order. And, firſt, I ſhall treat of Scrophulous Glands.

CHAP.

CHAP. XII.

SECT. I.

Of the Diſorders *on* Scrophulous Glands.

I HAVE formerly ſhewn, that, in a ſound State, the Uſe of the Glands is to ſecrete the various Juices they were deſigned for, at the ſame time ſending back into the Maſs ſuch Parts of the Blood from which they were ſecreted: From whence it will appear, that, when the Blood becomes unſound by its being intangled in an Abundance of this Phlegm, inſtead of the Glands being the Servants and Aſſiſtants of the Body, they become deſtructive Enemies to Nature; for, from the Blood being thus entangled, which ſhould ever be vigorous and active,

this cold Phlegm quite choaks up theſe Glands, from its glewy Quality; and, from being retained there too long, it becomes rancid, and conſequently acrid; and ſo, by ſlow Degrees, it deſtroys the Subſtance of them, by which they appear, on opening them, as if they had contained Curds and Whey. Sometimes, indeed, they do not produce a Fluid in them, but ſwell to a great Degree, growing hard without any Inflammation: And as there are everywhere Ducts leading from each neighbouring Gland, which ſecrete the ſame Kind of Fluid from theſe Ducts, they affect one another, till I have frequently obſerved Cluſters of them on each Side of the Neck of the Patient, tied together by their Ducts, as Grapes are by their Stems to the Bunch; and though theſe ſeverally

are by the Anatomiſts called conglobated Glands, yet, when they are thus diſeaſed, they become, to Appearance, one conglomerate Gland. Now in either Caſe the Patient can be cured by no other proper Means than by diſcharging this phlegmatic Matter, either from opening theſe cold impoſtumated Glands, or from dividing ſuch of them as will not have a Fluid in them, and afterwards turning out their Inſides by your Spatule or Fingers: By either of theſe Means the Blood may be exonerated of this Poiſon better than by any Internals; for it is undoubtedly certain, that, in all the obſtructed Parts of the Body, even in the Bones themſelves, till you diſcharge the peccant Matter, and give a Vent to it from the Part it poſſeſſes, you never cure the Patient properly: for, if the Diſeaſe lies in the *Medulla*, till you open

the Bone which confined it, you may purge, nay, ſalivate the Patient to no Purpoſe; for what is once deſtroyed, will ever remain ſo. In like manner, theſe indurated Glands now ſpoken of, by your opening ſome of them, the Sores from thence ariſing will diſcharge ſuch Matter from the Blood, and neighbouring Glands, as cauſed their Diſeaſe; and, from a Continuance of ſuch a local Diſcharge, more Health is produced generally than by all other Means.

I could treat of the *Melliſeris*, and other cold Tumors; but I hope I have ſaid, in this Chapter on ſtrumous Glands, enough to ſhew, that their Origin proceeds from this Phlegm now deſcribed. They, who pretend to know otherwiſe, would do well to inform the World of it; for, before this,

this, I never knew any one attempt to ſhew how this Phlegm was formed, or of what it was produced. Nevertheleſs, before I leave the Conſideration of this diſſolved State of the Blood, it may not be improper to hint at the Cauſe of Rheumatiſms, as alſo proceeding from this glewy Matter, by its adhering to the Muſcles, which ſhould ever, in a healthy State, move in a *Sinovia*, ſuch as the Joints and Tendons are endued with, for their more eaſy Motion. Now, when the Muſcles and Tendons, inſtead of it, are entangled with ſuch a glewy Matter as the Phlegm is deſcribed to be, I apprehend this may be the Cauſe of a Rheumatiſm; but I forbear, leſt I ſhould grow too prolix, and therefore ſhall endeavour no farther to deſcribe any other Diſeaſes proceeding from Phlegm; but remark only ſo much,

much, that what can cure ſuch a depraved State of the Blood, muſt proceed from a Change of Air, or ſuch Medicines as will, from the *Primæ Viæ*, create new and ſound Globules to the Blood, to overcome this Size.

I ſhall now proceed to ſpeak of ſuch Inflammation as proceeds from the Bile, and firſt of the *Eryſipelas*.

SECT. II.

Of the ERYSIPELAS.

AS I apprehend, an *Eryſipelas*, from its Colour, proceeds from the Bile, I ſhall therefore firſt deſcribe the *Eryſipelas* in its Appearance; and then ſpeak ſomething of the Bile itſelf.

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An *Eryſipelas* is an Inflammation much paler than a *Phlegmon*, from whence many have conſidered it as a *Phlegmon*, affecting the Surface of the Skin and capillary Blood-veſſels only. It affects all Parts of the Body as a *Phlegmon* does; but it is demonſtrably of another Nature from that of the *Phlegmon*; for it is as much of a yellow Colour as of a red, which is no Characteriſtic of the *Phlegmon*. Now as the Bile is the only Fluid belonging to the Body which has this yellow Tincture in it, and as the Excrements, and what elſe has the Tincture of Yellow in it, are known to proceed from the Bile only, had no Author before me deſcribed it as proceeding from the Bile, it is evident, from the Obſervations I have made, that an *Eryſipelas* muſt proceed from Choler or Bile; for which Reaſon it will

will not be improper to deſcribe the Formation of the Bile, with its Uſes.

The Bile is a Fluid of a deep-yellow Colour, ſeparated in a very great Quantity by the Liver: Its Receptacle is the Gall-bladder, which is tied to the Liver: It has a Duct into the *Pylorus*, or Lower Orifice of the Stomach, the more readily to meet with ſuch other Juices as are neceſſary to form firſt of all a milky Softneſs, and a Slipperineſs in the Chyme, as it paſſes along the *Duodenum*, the *Jejunum*, and *Ilion*; for on theſe the Lacteals are beſtowed. My Intent is not to go farther with the Paſſage of the Chyle from hence into the Blood; but to ſhew the Nature of the Bile only, and to demonſtrate its Uſe in as brief and expreſs a Manner as I can. It bears the neareſt Reſemblance

blance (of any thing factitious) to the *Lixivium Capitale*, when it is mixed with Oil; for, if you add warm Water to either of theſe, they inſtantly give it a great Slipperineſs, and the Appearance of Milk; beſides, it anſwers the ſame Uſe in ſcouring any thing withal, as the *Lixivium* will do; ſo that this will prove it to be a Fluid of more Activity than any other in the Body: And, as I have hinted before, that the mildeſt Fluids, when out of their Bounds, produce bad Effects, what muſt be the Conſequence, when the Bile, which is this acrid firſt Mover of all the reſt, ſhall happen to ſtray out of its proper Bounds, and break into the Blood, after it is become perfect? Is it any Wonder that it ſhould diſſolve the Globules of the Blood, and cauſe ſome of them to paſs with it where

they ſhould not? And thence, if they appear on the Surface of the Skin, it is called an *Eryſipelas*, or *St. Antony's Fire*: If on the Inteſtines, a bilious Colic, *&c.*

In the Cure of either, great Regard muſt be had to the bleeding of the Patient, and what elſe is properly preſcribed.

There is a mild Sort of this Diſeaſe, which is occaſioned by the burning Heat of the Sun drying the Surface of the Skin of tender Perſons; but this I look upon as a ſpurious or weak Species of the *St. Antony's Fire*, without any Fever, which the other always has; and a little Oil of Almonds, or the like, generally cures it in a Day or two. As to the genuine Species of it, I can ſhew, that

it not only affects the Surface of the Skin, but I have known it often impoſtumate, and bring away the *Membrana adipoſa* in Sloughs, with the Diſcharge of the Matter occaſion'd thereby.

I might ſhew moreover, that the Bile out of its due Bounds is the Cauſe of the Jaundice, and many other Diſeaſes, which for Brevity's ſake I ſhall forbear to treat further of.

SECT. III.

Of the Common HERPES, *and of* EXCORIATION.

BEFORE I leave the Diſeaſes which affect the Surface of the Body, I chuſe to ſpeak of the Cauſes of the common *Herpes*, or Pimples

which the Skin is liable to be affected withal; and, at the ſame time, to account for the Excoriations of it; as I apprehend both Diſeaſes proceed from a Redundancy of the Salts of the Blood. Now, as I have before obſerved, that of Neceſſity the Blood muſt abound with Salts, which are left therein by the Aliment that nouriſhes us (for all Things have Salt in them), ſo, were it not for the two Outlets of theſe Salts from the Blood, I mean the Kidneys, and the Pores of the Skin, they would produce infinite Diſeaſes in us.

As to thoſe which are produced from them in the Kidneys, I ſhall treat of them in another Place; but as, by the Diſcharge of the Sweat, the Skin is liable to have theſe Salts at certain Seaſons left in the Glands of it,

it, they are thereby heated and inflamed ſo as to make the Appearances which are called *Herpes* or Pimples; and from the *Spiculæ* of theſe Salts the great Itching is occaſion'd.

In like manner all Excoriations of the Body may from theſe Salts be accounted for. As the Pores of the Skin are deſigned for the Diſcharge of the Sweat, ſo, when they happen to be overcharged with theſe Salts, they become quite cauſtical, not only eroding the *Cuticula*, but even ulcerating the Skin; particularly under the Toes and behind the Ears of Children, and the other Emunctories of the Body.

As both Diſeaſes are occaſion'd from a Redundancy of theſe Salts, Bathing or Waſhing the Skin frequently

quently with warm Water, will, as it diſcharges the Enemy externally, greatly conduce to the Cure of both, with more Safety than any drying or purging Means can. For I have known many, who, by the Uſe of Pin-duſt ſprinkled in their Stockings, and other vitriolic Remedies uſed to dry and repel the Humour occaſion'd by ſweaty Feet, look as if they had been poiſon'd. But when Ulcerations are produced by theſe Salts, I have found a ſoft digeſtive Cerate of great Service in their Cure, when applied conſtantly after waſhing the Feet and Toes.

CHAP.

CHAP. XIII.

SECT. I.

Of TUMORS *proceeding from* MELANCHOLY.

HAVING ſhewn, that *Blood*, *Phlegm*, and *Choler* are productive of various Diſeaſes, it remains that I further ſhew, agreeable to the Opinion of the Antients, that the Blood at certain Seaſons is liable to become void of all Floridneſs, appearing almoſt as black as Ink, which the Antients have termed the *atra Bilis*, or Melancholy of the Blood. When it is in this State, carcinomatous and cancerous Diſeaſes are ſaid to be occaſioned from thence. Now, as I have ſaid before, whether we have Sagacity enough to find them out or not, every known Diſeaſe muſt have

a certain regular Cauſe for producing it: Becauſe, if a *Cancer*, for Inſtance, be known to be ſo, as it muſt be from the regular Appearance it makes; then of courſe this muſt proceed from a regular firſt Cauſe.

Now, ſince every Surgeon of any Degree of Practice knows, that the Blood, eſpecially of elderly Women, who want the uſual Benefit of Nature, is frequently of an aduſt Complexion; and moreover, ſince it is generally found, that theſe People now deſcribed are moſt liable to cancerous Complaints, why may not the Antients be regarded in this Particular as well as in moſt others; ſeeing that thoſe who oppoſe their Sentiments eſtabliſh nothing in the Place of what they would deſtroy? I can add one Obſervation of my own to countenance

countenance this Opinion, which is, that I ſeldom take off a cancerous Breaſt but I look for ſome black Spots in the Glands of it; and I ſcarce ever fail to find them appear like a Drop of Ink, ſometimes only in one Gland, ſometimes in divers Parts of the Breaſt.

Whatever this Poiſon is which occaſions a *Cancer*, it is a very deadly one, but yet not ſo fatal as to have the Cure of it always deſpair'd of: For it is frequently local, and then Extirpation will cure it. The Difficulty of its Cure proceeds from its Uncertainty of being come at; becauſe, when the Operator thinks he has extirpated the Whole, ſome diſtant unperceiv'd Glands, from the Communication of their Ducts with the former, have render'd the Cure incomplete.

I confeſs, from theſe Conſiderations for the Benefit of human Life, a Surgeon who may be admired for preſerving Limbs on, deſerves more Commendation than the beſt operating Surgeon that ever liv'd, who only may be able to boaſt of the Numbers he has taken off.

I have ſaid all that I ſhall offer on this Head; only wiſh, if this be not the Cauſe for the Origin of a *Cancer*, that it may be the means of inducing others to give a better Reaſon for it.

CHAP.

CHAP. XIV.

SECT. I.

Of the OPHTHALMIA.

I SHALL proceed to treat of the *Ophthalmia*, and ſome Diſeaſes of the Eye; chuſing to keep as near to the Method I firſt propoſed as poſſible; which was, to conſider ſuch Diſtempers as affect the Surface of the Body, and afterwards proceed to thoſe of the Bones. And although the Eye be not eſteemed a Part of the *Cutis*, yet it is a Part in the View: But, as I propoſe in this, and in all I have written, or ſhall write, to ſpeak only of ſuch Things as have not (at leaſt not to my Knowlege) been remarked by any one elſe, I intend to be as

brief and explicit as the Subject will admit.

The *Ophthalmia* is a general Name for a *Phlegmon*, or Inflammation of the Eye. The Cauſe of it frequently proceeds from taking Cold, a ſcrophulous Diſorder, or ſome external Accident: Of all which I think I have already ſo fully treated, that it will be needleſs to ſay any more in this Place. But that which I inſiſt on, as knowing it from long Experience, is, that, from all the Authors I have read on this Diſeaſe, nothing has been leſs underſtood by them than its Cure. For, as I have been particularly appointed by the Governors of the Hoſpital to take care of the Diſeaſes of the Eyes, I have preſcribed to ſo many of them in my Time, that I am quite ſatisfied, let the firſt

Cauſe

Cauſe of theſe Inflammations be what it may, nothing but topical Applications will cure them ſoon; and in the worſt of them, which are curable, I find no Difficulty in doing it by Topics only.

When the Body ſeems eaſy in other Reſpects, I conſider it as a Strangulation or a Stricture left on the Blood-veſſels of the *Conjunctiva* and of the *Cornea*, which wants an external Relief; and, as I ſaid before, when I ſee any Part inflamed, I begin to think from whence the Obſtruction or Strangulation of the Part can proceed, and how I may be able to take off its Stricture: And after having found, that Bleeding and Purging will do little toward performing the Cure, and perceiving that ſome had made a Scarification of the

the *Cornea* by a Beard of Barley, and thereby boaſted their Succeſs in its Cure, I conſidered, that the Good ariſing from thence muſt proceed from its juſt cutting into the firſt *Laminæ* of the *Cornea*, ſo far only as to open the Extremities of the Ramifications of the Arteries; and from reflecting on the Cauſe, by which the Cure from Scarification could be made, I apprehended that, if it was performed, it muſt proceed from the Strictures of thoſe Veſſels being taken off by their weeping through theſe very ſlight Wounds made by the Beard of Barley.

This Conſideration put me on trying if ſome ſharper Waters than thoſe which had hitherto been uſed, might not, from their vitriolic Quality, crop the Points of theſe inflamed Arteries

as

as effectually as bruſhing them with the Barley-beard was ſaid to do, but with more Certainty: And thereupon I made the Trial, by dipping a Pencil into a Water, and drawing it through the Eyes four times a Day; ſome of which I at firſt thought too ſtrong, but afterwards found they would bear the Application of one made much ſtronger than any I ever met with in the Preſcriptions of any Author with good Succeſs, without giving any Internals; and how this Method has ſucceeded, the Patients who have tried can beſt teſtify.

I have obſerved, that all thoſe Waters, which are reckoned among the cooling Tribe, ſuch as Frog-ſpawn, Plantain-Water, and the like, have rather increaſed the Inflammation; but the ſharpeſt Sort immediately

give Eaſe. This I am ſure I can ſay, that I never ſaw Calomel adminiſter'd in an *Ophthalmia*, but that the Eye was more inflamed thereby: And I think it natural it ſhould be ſo; for, by all that we can ſpeculate on the internal Uſe of Mercury, we can no otherwiſe account for its Operation, than as it ſplits and rarefies the diſeaſed Parts of the Blood, ſo as to render them more apt to paſs ſuch obſtructed Parts of the Body, as they could not enter before.

Now as the Inflammation of the *Cornea*, in Fevers, will, ſometimes appear ſo very delicate, as to cauſe it to reſemble burniſh'd Steel, ſo, after greatly inflamed Ophthalmies, it will make the ſame Appearance; and, in either Caſe, if, by giving Mercury to the Patient, you do not puſh off the Obſtruction,

Obſtruction, you load the *Cornea* the more.

The *Cornea* is ſo conſtructed, as to admit the Rays of Light to paſs thro' it in the greateſt Perfection; from whence it is proved to be more pellucid than Glaſs; and therefore its Blood-veſſels cannot be perceived but in an Inflammation; which is, when they are ſtrangled. And at ſuch a time, the Uſe of Mercury will croud them with Blood ſtill more. And this Conſideration may ſerve to ſhew why cancerous Glands alſo are frequently loaded by the Uſe of Mercury.

Having now completed my Purpoſe in the foregoing Treatiſe on the Inflammation of the Globe of the Eye, and not intending to offer any thing

but what I think may be a new Conception of my own, I ſhall juſt treat of the *Anchilops* and *Ægilops*, and ſay no more concerning the Eye.

SECT. II.

Of the ANCHILOPS *and* ÆGILOPS.

THE *Anchilops* is a Tumor proceeding from an Obſtruction of the *Saccus lacrymalis*. In order to render the mechanical Cauſe of this Diſeaſe more intelligible, it will be neceſſary firſt to deſcribe the *Saccus lacrymalis*, and its Uſe.

The *Saccus lacrymalis* is a Bag lodged in the inner *Canthus* of the Eye, juſt under the *Puncta lacrymalia*. Its Uſe is to receive the Tears, with which the Eye is kept moiſt,

that it may thereby move with more Freedom. There is one Duct into this Bag out of the Eye to convey the Tears into it, which would otherwiſe overflow the Eye-lids; and another Duct out of it into the Noſe, to convey the ſuperfluous Quantity of Tears down the Noſtril.

This, for my preſent Purpoſe, is all the Deſcription I need give of it; except in this material Circumſtance, that it is lined with a *Mucus*, as I have ſaid all the Ducts of the Body are, to defend it from the Acrimony and Inflammation which the Tears would otherwiſe occaſion in it. Now whenever the lower Duct of this *Saccus* becomes obſtructed, by the Eye-lids ſhutting together, and thereby driving the Tears through the *Puncta lachrymalia* into the *Sac-*

cus (if at that time its lower Duct into the Noſe be ſtopped) the *Saccus* becomes ſo diſtended with the Tears, that the mucous Glands, which ſhould only line the Bag with no more than is juſt ſufficient, are by this means ſo ſtimulated, as to diſcharge *Mucus* enough to fill up the *Saccus*; ſo that the Tears can find no Admiſſion thereby.

This *Mucus*, by lying there, produces an Inflammation; and from hence ariſes the Tumor here deſcribed called the *Anchilops*.

When the Tumor is formed, if you preſs it hard with your Finger, it diſcharges no Matter into the Eye, but a large Quantity of *Mucus*, not leſs ſometimes than a Tea-ſpoonful. When it breaks of its own accord, it degenerates

degenerates in time into a *Fiſtula lacrymalis*; if not, you muſt, in order to cure it, open it with a Knife, rather than by a Cauſtic, which would take away great Part of the Skin, and thereby cauſe a much greater Scar: Beſides, notwithſtanding the Cauſtic, you are frequently obliged to uſe other means to go deeper through the *Saccus*. However, it muſt be cured as the *Fiſtula lacrymalis*, which is another Name for the *Ægilops*. I ſhall now proceed to treat further of the Manner of their Cure.

SECT.

SECT. III.

Of the FISTULA LACRYMALIS.

THE *Ægilops* and *Fiſtula lacrymalis* being the ſame, as I have before obſerved, I need go no farther to ſhew wherein its Cure muſt conſiſt. Therefore, till theſe diſeaſed Glands of the *Saccus lacrymalis* are deſtroy'd, no Cure can be obtain'd: To which End, if the Aperture or *Fiſtula* be not large enough, I divide it, and make it ſo either with a Pair of Probe Sciſſars, or the Knife, till I can, by the Help of my triangular Probe, introduce into the *Saccus* itſelf ſome acrimonious Medicine, which may excoriate and deſtroy the diſtended and diſeaſed Glands of it. When this is done, the Cure is in a great meaſure effected; to which end I have

have ſometimes uſed the *Pulvis Angelicus*; at others I have dipped my Lint in a little of the *Lixivium capitale*: But Care muſt be taken not to deſtroy the *Saccus* quite through into the Eye, which indeed I have never yet ſeen done. The *Saccus* has often burſt of itſelf, and from thence has occaſion'd a Foulneſs in the *Os Unguis*; and when the Bone has come away, the *Saccus* has heal'd up.

This Accident has given Riſe to a very injudicious Propoſition toward obtaining a Cure; and that was, to burn with a Cautery thro' the *Os Unguis*, that thereby the Matter might have a Paſſage from the *Saccus* down the Noſtril. How injudicious this Thought is, will appear to any one, who conſiders, that, by the ſame means that Nature fills up this Wound

on

on the Outſide of the Noſe, ſhe muſt heal it up on the Inſide alſo. Moreover, as the Perforation of the *Cranium* is ever filled up by a membranous or bony Subſtance, ſo muſt this.

I have ſeen a Cautery apply'd for this Purpoſe, which deſtroy'd the *Crepitum* or Edge of the Eye-lid to ſuch a Degree as to cauſe a Lippitude, which proved a worſe Diſeaſe than the former.

Others have preferr'd perforating the Bone only with a cold Inſtrument; but the Impropriety of both Methods is equal.

Cures may have been performed by theſe Methods; but then they happen'd by deſtroying the *Saccus* by the Accident of Burning or Perforation;

foration; and ſo the Inflammation it occaſion'd criſped it up: But I have ſo often found the Method I at firſt preſcribed for the Cure of this prove effectual, that I dare pronounce it the beſt that can be uſed; keeping it open with a Tent dipped in the red Digeſtive for ſome time; or, if the *Saccus* have been diſtended very largely, it may be kept open with a ſmall ſilver Pipe, till it comes to unite; but I never ſaw it do otherwiſe than well by this Method. For the ſame Reaſon I offer'd for treating of theſe Diſeaſes of the Eye, I ſhall treat of ſome which affect the *Penis*. And firſt,

CHAP. XV.

SECT. I.

Of a GONORRHOEA.

A *Gonorrhœa* proceeds from too great a Quantity of that *Mucus*, which, in a healthy State, ſhould only line the urinary Paſſage.

It is generally occaſioned from an Excoriation of the Glands which line the *Urethra*; as frequently thoſe under the Prepuce are by the ſame Cauſe from a venereal Taint after Coition. But there is ſuch a material Difference in the Manner wherein the *Urethra* is affected with this Poiſon, that it will be neceſſary to treat further of it.

If

If it happens, that, after Coition with an unſound Perſon, the mucous Glands only of the *Urethra* are heated thereby, and from thence a large Diſcharge enſues, it proves well both for the Patient and Surgeon; for then there is a good Cure ſoon performed, to the Satisfaction of both. But this happens in like manner as when a Perſon breaks his Leg well; for in this Caſe the Surgeon will ſet it well. Now ſuppoſe, inſtead of the Caſe before deſcribed, a Patient very unhappily infected, having little or no Inflammation, nor much Diſcharge, ſo that the Patient, and perhaps the Surgeon, are not apprehenſive of any Danger ariſing from ſo ſmall a Complaint; for which Reaſon I ſhall endeavour to ſhew wherein the great Difference may

ariſe between being differently infected by the ſame Poiſon. And as that muſt proceed from the Locality of it, I ſhall firſt deſcribe the *Urethra*, and ſuch Parts of the *Penis* as may ſerve to illuſtrate this Matter.

The *Urethra* reaches from the Bladder to the Extremity of the *Glans*. Its Uſe is, to diſcharge the Urine at certain Seaſons, and at others the *Semen maſculinum*. Beſides the common mucous Glands, which ſhould uniformly line the Inſide of it with the *Mucus* before ſpoken of, there are other large Glands, as the two *Proſtratæ*, which lie juſt on this Side the *Sphincter*: They admit thro' them the Ducts from the *Veſiculæ ſeminales*, that when they diſcharge their Contents, theſe Glands at the ſame time may emit a Liquor to facilitate the other in its Diſcharge.

Diſcharge. There are other large Glands lower down, whoſe Operation is the ſame with the *Proſtratæ*: Theſe Glands have, by certain Ducts, a Communication with the inguinal Glands. The *Urethra* is compoſed of a double Coat, betwixt which is a ſpongeous Subſtance, called the *Corpus cavernoſum Urethræ*; This communicates with the *Glans Penis*; the Covering of which is formed out of the internal Coat of the *Urethra* in a kind of *Convolvulus* or Hood; which Membrane is terminated with the Origin of the Prepuce.

As I have before deſcribed other Parts only for the ſake of what I am to ſhew concerning the Diſeaſes of them, ſo in this I avoid ſaying more than will ſerve only to illuſtrate what its Diſeaſe may proceed from.

Beſides

Beſides the *Corpus cavernoſum Urethræ*, there are two other Bodies called the *Corpora cavernoſa Penis*: They are ſituated on each Side above the *Urethra*, and are of the ſame Texture with the former; when diſtended with Blood, they all ſerve to increaſe the Size of the *Penis*. As the Inſide of them is ſpongeous, when the venereal Poiſon gets into that Part of the *Urethra* which alſo communicates with and forms the *Glans*, it renders the *Urethra* callous, and thereby the whole Length of it feels quite rigid. Now, beſide the different Nature of the Poiſon wherewith a Perſon may be infected, it becomes difficult to eradicate it from a local Situation; for I have ſeen the *Glans* ſo diſtended with venereal Matter, that, by preſſing it with my Fingers, it diſcharged as much as a

Sponge

Sponge of that Size could have done. In this State of the Caſe, tho' it is called only a *Gonorrhœa*, yet there is a wide Difference betwixt what is called a ſimple *Gonorrhœa*, and a Diſcharge from the *Penis* iſſuing from behind the Covering of the *Glans*, or from the *Capſula* of the *Proſtratæ*, or the other larger Glands. From hence, when balſamic or aſtringent Medicines are too early given to the Patient, the Mouths of theſe Glands are ſealed up thereby, and ſo the Poiſon is thence, by the Ducts leading to the inguinal Glands, convey'd to them; and if they inflame ſo far as to form Matter in them, when they are opened, and treated as they ſhould be, they never fail to diſcharge all the Poiſon affecting the neighbouring Parts which com-

communicated with them, as well as from themſelves.

If they will not come to Suppuration, I always, if the Patient will admit of it, divide the largeſt of the inguinal Glands into the Body of it with my Knife, and with my Fingers or *Spatula* turn out their Inſides, or deſtroy them with Eſcharotics. This I take to be the eaſieſt, the ſafeſt, and moſt expeditious Method of any towards a Cure.

In this State of the Diſeaſe you ſee a great deal depends on the Locality of it, as well as on the Degree of the Venom. A further Conſideration may be had on the Cauſe of Shankers, and the large Cluſters of the *Verucæ*, which I have often ſeen poſſeſſing the Bottom of the *Glans Penis*. Now, whoever conſiders the

Nature of the internal Infection of the *Glans*, which I have ſeen and deſcribed, need not wonder that it ſhould from thence infect the neighbouring Glands, and cauſe them to produce theſe Effects: For, as I have ſhewn in *Chap.* VII. *Sect.* II. concerning Warts, that they are produced from the Efflorescence or Prevalency of the Artery over the Vein belonging to each Gland that forms them, ſo when this Matter begins to obſtruct theſe odoriferous Glands, as they are called, the Artery puſhes more Increaſe upon them than the Vein can carry off.

And this may account for theſe Warts and Chankers, and alſo for the Carnoſities which are ſo often found in the *Urethra*, which ariſe moſtly from the Proſtrates, and

ſometimes from Mr. *Cowper*'s Glands, which are ſituated about two Inches on this Side the *Proſtatæ*; but, as I profeſs not to treat accurately of their Cure, I ſhall leave it to the Experience of every one who may be employ'd in it.

I ſhall proceed no farther with this Diſeaſe at preſent, but haſten to ſhew the Nature and Cure of a *Fiſtula in Ano.*

CHAP.

CHAP. XVI.

SECT. I.

Of a Fistula in Ano.

EVERY Impoſtume near the *Anus*, ariſing from Piles or otherwiſe (though not properly), is called by this Name; provided it extends itſelf up by the *Rectum*, or into different *Sinus's*. But that only ſhould be called a *Fiſtula*, which having broke of its own accord, the Part through which the Diſcharge was made becomes healed on every Side.

If it reaches up high by the *Rectum* in various *Sinus's*, which turn many Ways, they muſt each be traced and laid open as far as is con-

ſiſtent with Safety; and if dreſs'd with red Digeſtive, the Patient does well. This is what concerns the common *Fiſtula in Ano*; which, if rightly underſtood, is as eaſily cured as any other Diſeaſe.

There is another Sort, which I have never ſeen properly deſcribed: It will try the Skill and Patience of the moſt able Surgeon; and yet, if perſevered in with Judgment, is commonly curable; I mean a *Fiſtula* rather *in Perinæo*, but commonly called *in Ano*: It ariſes from a Crack in the *Urethra*, which lets the Urine thro' it when the Patient makes Water; whereby Impoſtumations through the whole Length of the *Urethra* are frequently brought on, which break through various Parts of the *Scrotum* from all of which the Urine is diſ-

charged

charged at one time. The Cauſe and Cure of it are as follows.

It proceeds from an Abſceſs firſt formed in the Proſtrate Glands, which breaking inwardly into the *Urethra*, as their Situation is juſt on this Side the *Sphincter Veſicæ*, on the Urine's paſſing out of the Bladder, the hollow Sore, which was the impoſtumated Gland, is filled therewith; which, in Proceſs of Time, perhaps by the Coat of the Gland's being deſtroy'd behind, as well as it was forward in the *Urethra*, gets into the *Corpus cavernoſum Urethræ*, cauſing the terrible Impoſtumations I am ſpeaking of.

To cure this, you muſt trace every *Sinus* up to its Fountain-Head, and lay them open into one another; for as

as they ſprang from this firſt Cauſe, till they are traced back to it, no real Cure can be obtained: And when they are thus laid open, you may commonly perceive the Urine come away backward through the Sore more plentifully for laying open the other *Sinus's* leading to it: But let not that terrify the Operator; for what he has done is juſtifiable; and thence he will, if the Parts are ſo treated, ſeldom fail of a Cure.

There is a ſtill worſe Diſeaſe proceeding from the *Veſiculæ ſeminales*, which are ſituated on each Side above the Neck of the Bladder; their Ducts entering the *Urethra* by the *Proſtatæ*, and are frequently ſo infected by the Venereal Taint, as not only to convey it from them to the *Teſtes*, leaving the *Vaſa deferentia* as hard

as

as a Quill; but ſometimes the *Veſiculæ* themſelves are alſo deſtroy'd thereby; from whence Impoſtumations ariſe, which diſcover themſelves on the Points of the *Nates* near the *Perinæum*, which often bring on a Mortification of the Parts affected; provided the Surgeon don't cut into each Side as ſoon as he is ſure there is a Fluctuation, not waiting, as in other Caſes, for its coming near the Skin. This timely performed *ſ. a.* will effect a Cure, as I know many now living can teſtify.

Having treated of the external Parts of the Body as far as I intend to go, I propoſe to deſcend to the next Coat or Membrane under the *Cutis* or Skin, which is called the *Membrana adipoſa*; the Uſe of this Membrane being to retain the *Adeps*

or Fat in manner of a Sponge, thereby to lubricate and nouriſh the Skin, which, for want of it, would, from the circumambient Air, grow as ſtiff as Parchment. In the firſt place I ſhall attempt to ſhew the Cauſe of the Putrefaction of this Fat, and the conſequential Diſeaſes ariſing therefrom; which will lead me to treat,

CHAP.

CHAP. XVII.

SECT. I.

Of the VENEREAL DISEASE.

I HAVE before ſhewn by what Means this Venereal Poiſon gets into the Blood. My Intent, therefore, is now to ſhew what Situation it may have in the Body, and by what Means it ſo operates, as to cauſe the miſerable Effects it produces for Want of a proper Remedy. The Venereal Poiſon chiefly affects the fat and unctuous Parts of the Body; and this is not mere Conjecture, but it proves itſelf, when we obſerve the Parts which are moſt injured from it.

The Uſe of the Fat, either in the *Membrana adipoſa*, or the *Medulla* in the Bones, is, from its mollifying

Nature, to aſſwage and ſoften any Rigidneſs, which might begin either in the Bones, or on the Skin. Now, when we conſtantly perceive this Diſeaſe chiefly affecting the Bones, or the *Cutis*, it is no Queſtion but that their Protector is become their Enemy, and ſo its oily Nature is turned to an acrimonious one; as if, inſtead of Oil, one ſhould by Miſtake uſe *Aqua Fortis* for any Purpoſe. Now, to bring this to the Point, the firſt and mildeſt Symptom this Diſeaſe ſhews itſelf in, is on the Skin, when it appears in ſmall Copper-coloured Spots, as if they had been touched with ſomewhat dipped in *Aqua Fortis*; for that would occaſion the ſame Appearance. At length they grow more formidable; and, as I doubt not but that the Fat in the *Membrana adipoſa* is become diſeaſed, ſo, inſtead of its protecting,

protecting, and keeping the Skin ſoft, it ſends to it a burning Oil, which, as *Aqua Fortis* would, incruſts the Skin at length with great Scabs, and afterwards produces perfect Eſchars; yet is this the mildeſt and leaſt dangerous Symptom; as on the contrary, when this Diſeaſe affects the Bones, it is the moſt dangerous, tho' at firſt it appears the leaſt formidable; but this Complaint is only ſo from its Situation, and, in reſpect to that, it always becomes a ſad one; ſeeing that, let the Surgeon do what he will towards a Cure, till the Bone is opened, ſo that the poiſoned *Medulla* may be diſcharged from thence, no proper Cure can be obtained. Where-ever therefore, as I have often before ſaid, the Surgeon lets out the Diſeaſe from whence it was impriſoned, whatever may be further neceſſary towards a

Cure, it greatly aſſiſts it. This may account why Bathing much in warm Water not only aſſiſts this Diſeaſe on the Skin, but all others. I ſhall ſpeak more of the Diſeaſes of the Bones in their proper Place; and ſhall therefore proceed to ſhew other Diſeaſes affecting the *Membrana adipoſa*, and, firſt,

SECT. II.

Of the ANASARCA.

AS I before have ſhewn, that the *Membrana adipoſa* is cellular, and that its Cells communicate with one another, as thoſe in a Sponge do, I need only deſcribe the Diſeaſe, and ſhew, that it is a Dropſy, or a Diſcharge of the Lymphatics into it, which ſhould, by doing their natural Office, have conveyed it through the Skin.

Skin. If, by Purging, and what elſe is proper, it cannot be cured, it will be neceſſary to let it out by ſmall Scarifications; for, when ſome of the Cells are opened, they, from communicating with the reſt, frequently will empty the Part affected. I ſhall treat of another great Diſeaſe this Membrane is the Seat of, and that is a *Sphacelus* or Gangrene.

SECT. III.

Of the SPHACELUS *or* GANGRENE.

AS the *Membrana adipoſa* is always the Seat of a Gangrene or *Sphacelus*, I ſhall ſhew, that, after a Fever, when Nature attempts to throw off the morbid Matter of it by a *Phlegmon*, or an *Eryſipelas*, on the Skin and *Membrana adipoſa*, the Load

Load of it may be laid on both ſometimes, ſo that the *Cutis*, which was at firſt affected with it, has, by outward Applications, been relieved; but the Membrane having been diſtended beyond its natural Tone, it mortified: And thus, as if a Man's Waiſtcoat were burning, the Fire would not ſhew itſelf, till the Coat is burnt thro' in divers Parts at the firſt Appearance; in like manner, the *Ichor* proceeding from the Membrane underneath deſtroys the *Cutis* at once, perhaps, the whole Length of the Limb which it affected, without giving any Warning; and herein it manifeſtly differs from a Mortification, which proceeds generally from a Privation of the Nouriſhment of the Skin, Membranes, and Tendons, all at once. Scarifying the Skin in a Gangrene is a very idle Practice, unleſs the Surgeon, if he

he hath Sagacity enough, when the Membrane is not deſtroyed, but only ready to ſuffer, then cuts largely through both, and thereby lets out the inflamed Juices, which diſtended it, and by that means takes off its Tenſion. In ſuch an Act he ſhews both Judgment and Reſolution; ſuch good Treatment, continued, may cure the Patient. Having ſaid what I propoſed on the *Membrana adipoſa*, I ſhall begin to treat of the Joints, Muſcles, and Tendons, with ſome of their Diſeaſes.

CHAP.

CHAP. XVIII.

SECT. I.

Of the Diſeaſes of the JOINTS, MUSCLES, *and* TENDONS.

BEFORE I treat of the Diſeaſes of the Joints, it is neceſſary to ſpeak of the *Sinovia*, or what is vulgarly called the Joint Oil, with the *Ligamentum Burſale*, formed out of the *Perioſtium*, which is a ſtrong Membrane that covers the Bones. Now as every Joint of the Body would, by conſtant Uſe and Motion, grow dry, and unable to act, were it not for the *Sinovia* before ſpoken of; ſo this *Sinovia* would not be retained in the Joint, did not the *Perioſtium* of one Bone continue on to the next, and thereby form, over the Joint, the *Li-*

gamentum

gamentum Burſale, which, like a Purſe, contains this oily and ſlippery Fluid in it, to moiſten each Extremity, and preſerve them ſmooth, as Nature formed them, by capping the Extremities of each Bone with another Subſtance called a Cartilage. This being a true Deſcription of every Joint, I need ſay no more, but firſt treat of one of the worſt Sort of Diſeaſes which affects any Joint, and that is, of a Luxation of the Head of the *Os Femoris*; I do not mean a Diſlocation cauſed by a violent Accident, but from a Humour formed in the *Acetabulum*, which corrodes the Head of the *Os Femoris*; and from thence large Impoſtumations ariſe, which give infinite Trouble to the Surgeon, by employing his beſt Skill, and often not to his great Advantage or Credit; for, on the firſt Appearance of theſe

Impoſtumations, by the Matter beginning under the *Ligamentum Burſale*, the Joint is diſtended greatly before it breaks of itſelf, few Surgeons caring to be very enterpriſing in theſe unhappy Caſes, which, after all his Care and Skill, will often, by too great a Diſcharge of Matter, run off his Patient; and, if he happens to recover, it is generally on very bad Terms; for though, during the firſt Diſtention of the *Ligamentum Burſale* and the *Ligamentum Teres*, the Limb at firſt is elongated, yet no Cure is ever obtained, that I have ſeen, till the Head of the Bone has become carious; and thence, after a long Attendance, it has inſenſibly mouldered away in a long Diſcharge of Matter, and ſo in the End the Limb is left as much too ſhort, as at firſt it was too long. The Head of the Bone, or the Joint of the Hip,

Hip, is ſo ſurrounded by a Number of ſhort ſtrong Muſcles, beſides the *Vaſtus Externus*, that no Surgeon will like to cut thro, whereas, on the firſt Formation of Matter, after all other Means have been tried, it might have been the beſt Method to be purſued; for want of which the Matter generally gets into the *Faſcia lata* which embraces the Muſcles of the Thigh as a Boot does the Leg, and thence it frequently inſinuates itſelf amongſt all the Muſcles, and thereby renders the Cure difficult, which generally depends on making a free Diſcharge of the Matter, by paſſing into the *Sinuſes* large *Canulas*, or by opening them ſo, that the Matter, as it is made, may be conſtantly diſlodged.

I have deſcribed the natural Cauſe of this Diſeaſe, and its Cure; but,

as it commonly gives the Surgeon more Trouble, and procures him leſs Eſtimation, than moſt others, it may be proper to conſider the Origin of it more fully, by which I ſhall perhaps more eaſily explain ſome other Diſeaſes of the Joints and Tendons, when I come to treat of them.

I have mentioned the *Sinovia* of the Joint; but, as it is of infinite Conſequence to the Uſe of a Limb, I will, if I can, explain the Cauſe of its becoming diſeaſed. The *Sinovia* ſhould ever be a Fluid, left as ſoft as Oil, to keep the Joints pliant and free in their Motion. Now, when it becomes otherwiſe, it muſt anſwer quite different Purpoſes: For Inſtance, good Olive-Oil is fit to oil a Lock withal; but if, inſtead of it, you oil your Lock with Oil of Vitriol,

triol, I need not tell you the Conſequence. But it may be aſked, Since there are in all the Joints Glands formed in Conjunction with the medullary Ends of the Bones, to ſeparate this ſoft Fluid, whence can it become ſo acrid, as to corrode and diſſolve the Head of the Bone? To which I anſwer (as I before ſaid), When the Juice of any Part falls in, and improperly joins, with that of another, they both from thence may become diſeaſed. Now, when the *Sinovia* is ſeparated alone for the before-mentioned Purpoſes, it is a ſoft, and gentle Fluid; yet if, by Accident, the *Ligamentum Burſale*, or any of the Fibres belonging to any other Ligaments of the Joint, be cracked or broken from an Overſtrain or Contuſion, it from thence weeps

and

and diſcharges its Juices into the *Sinovia*, it thereby becomes inflamed; and ſo the Limb, for want of its ſlippery *Sinovia*, becomes uſeleſs; and, when it is ſo, there can be no great Hope of getting rid of the diſeaſed Fluid before deſcribed; for, as it may be obſerved, nothing is or can be made in vain, whether or no we are able to find out their Uſes, ſo the *Sinovia* is occaſioned, as the *Saliva* is, merely for its Uſe, and by Neceſſity; for, juſt as the one is increaſed by Maſtication, ſo is the other by Walking, or uſing the Part. Therefore, when the Muſcles grow uſeleſs, they ceaſe to employ the *Sinovia*. Wherefore, when the *Ligamentum Burſale* begins to be diſtended with a diſeaſed Fluid, dipping the Patient into a cold Bath is often preſcribed,

thereby

thereby to keep the Part, as much as may be, from Fluction. Bleeding, and gentle Purging, for the ſame Purpoſe, are preſcribed, and a diſcutient Plaiſter, is alſo applied, in order to give a Perſpiration to the outward Parts, that thoſe underneath may alſo, as being their Neighbours, feel, by their Communication, the good Effects of it.

I have been ſhewing how, from an external Accident, this great Diſeaſe may be produced; but, as it oftener happens from an internal Cauſe, I think proper to ſhew, that, as a ſcrophulous Diſeaſe of the Bones frequently produces the ſame Effect as the Venereal does; ſo when the Blood in general, or the *Medulla*, becomes tainted with a ſcrophulous Mixture, the *Sinovia* muſt thence partake of

its Nature. From what I have ſaid on this Diſeaſe, I am induced to treat of the *Anchyloſis*, or White Swelling of the Knee, the Elbow, or the like.

SECT. II.

Of the ANCHYLOSIS, or WHITE-SWELLING.

I HAVE ſaid ſo much in the former Chapter on the Origin of an Impoſtumation on the Joint of the Hip, that, as this ariſes from the ſame Cauſe, I ſhall only ſhew, from my Experience, how it may be cured. There are none of them curable after any of the Cartilages have been at all eroded; but I have cured many of the Knee, and other Joints, after they have been very large and painful.

An

An Anchyloſis is a large Tumor on the Knee, the Elbow, or any one of the large Joints of the Limbs, without any Appearance of an Inflammation, from whence it has the Name of the White Swelling given to it. It frequently, by cauſing a Contraction and Stiffneſs on the Joint, renders it quite uſeleſs.

In order for a Cure, my Method is, to bleed them, and keep them in Bed, applying quite round the Joint a diſcutient Plaiſter of the *Emp. de Sapon.* This in Winter I have warmed, as I pleaſed, by adding the *Emp. e Cymin.* By thus keeping the Patient conſtantly in Bed, not inviting the *Sinovia* to increaſe on the Joint by the Motion of the Limb, and by keeping the Body more inclined to perſpire than when out of

Bed, and the Joint being in a more than ordinary Perſpiration all the Time by the Uſe of the Plaiſter, I have effected many Cures; but I never ſaw one performed by the Methods formerly in Uſe by the firſt Men in our Profeſſion; which was, to give the Patient *Turbeth* Vomits, and apply the *Calx* Pultice, which was made of the Sediment of the *Aq. Calcis* mixed with ſome of the warm Herbs powdered. As I have ſaid all I intend on this Diſeaſe of the Joints, I ſhall proceed to ſhew, that the *Sinovia* is as neceſſary to the Uſe of the Muſcles and Tendons, as it is to the Joints; and, by explaining it, I ſhall the more eaſily ſhew the Diſeaſes it may occaſion on the whole Limbs. I ſhall therefore from hence take the Freedom to give my Thoughts on the Gout.

SECT. III.

Of the GOUT.

THE Gout is a painful Swelling generally beginning in the Joints, as I apprehend, from the *Sinovia* becoming diſeaſed. I have ſaid before, that the Muſcles and Tendons do all of them move in a *Vagina* or Sheath, which retains their *Sinovia*, as the *Ligamentum Burſale* retains it on the Joint. Now, as I have ſhewn, that the Uſe of the Limb increaſes, and at the ſame time diſpoſes of the Quantity it cauſes of this *Sinovia*; ſo, whenever a Superabundance of it, by too great a Degree of Nouriſhment, without Exerciſe, becomes more than the Patient can afterwards carry off by Exerciſe, that Quantity will, by lying longer in the Joint than it ſhould, grow ran-

cid; and, from the thinner Part of it being perſpired, the Remainder may be inſpiſſated or thickened; and thence it cauſes the Parts, it uſed to lubricate, to be inflamed. Now, though this Diſeaſe generally begins in the Joint, it ſometimes conveys itſelf, from the ſame Cauſe, down into the *Sinovia* lodged in the *Vagina* of the Tendons. And this may account for the difficult Motion of the Muſcles, as well as for the burning Pain in the Joints from the Gout. Nor does it end here, when it becomes habitual to the Patient: A ſmall Accident of a common Cold produces it; for, where-ever Parts have been contaminated or extended by any Kind of Diſeaſe, they the more eaſily admit it ever after. Beſides, this Diſeaſe, when it is thus formed, is liable to be tranſlated to other Parts, as to the

the Head, the Lungs, the Stomach, the Kidneys, the Urinary Paſſages, &c. The Origin alſo of this Diſeaſe may ſometimes proceed from an hereditary Taint; and, tho' I cannot then account for the Form of its Subſiſtence, I may be allowed, I hope, to ſpeak of its Effects. Therefore, as there muſt be another beſides an hereditary one, I have endeavoured to ſhew, that the firſt mechanical Cauſe of the Gout ariſes from the Source I have aſcribed it to. Whoever further attends to its Symptoms, and the Nature of its Cure, may be the more inclined to concur with me about it. I have ſaid, in a former Chapter, if, by any means, the *Sinovia* changes its natural Oilineſs, and becomes as an Oil of Vitriol, it thence ſerves as a Cauſtic, heating and burning the Parts it was intended to ſuccour.

Now

Now examine, from the Symptoms occaſioned by the Gout, if I have not here ſhewn the Cauſe of it; for the Patient is generally firſt affected in the Joint of the Great Toe, as it is a large Joint, which from thence may retain the greater Quantity of the *Sinovia*, and alſo from its being ſituated at the extreme Parts from the Heart, which is the firſt Mover of the Blood; ſo that, not having the full *Impetus* of the Blood, as the larger Joints, which are nigher to the Fountain-head, it from thence lingers, and begins to ſtagnate in that Part, where it burns as Oil of Vitriol would, till, by Length of Time, it gets through the *Ligamentum Burſale*, after which all the exquiſite Pain begins to abate. As the outer Membranes cannot give it ſo great Oppoſition as the former did, and as its

its Strength and Acrimony is abated by its mixing with the other Fluids it meets with in paſſing off by Perſpiration (but yet in a ſmaller Degree) its burning Quality remains; for, in its Paſſage, it affects the *Membrana adipoſa* and *Cutis*, and, by its obſtructing their circulating Juices, it cauſes them to ſwell greatly, and ſometimes leaves their Tone not recovered a very long time after. Such Perſons, whoſe Membranes have been often pervaded by this fiery Enemy, loſe the total Uſe of their Limbs. When this happens, the Membranes have been ſo frequently diſtended by the *Sinovia* paſſing through them, ſo that they become at length quite eaſy in every Fit for the future, from the Apertures it has occaſioned by its paſſing through the Membranes, whereby it enters the Muſcles,

Muſcles, without cauſing Pain, and by this means at length the Limb becomes quite ſtiff and uſeleſs. If the Cauſe I have given for the Gout be not a true one, I ſhould be glad to find another Conjecture which will appear ſo probable as this does; but when I make it appear, that the cretaceous Matter, which, in an healthy Perſon, is only ſubſervient to the Uſe of the Bones, and in this Diſeaſe, and the Stone, it ſtrays out of its natural Bounds; and that in the Gout it forms within the *Ligamentum Burſale*, at firſt, a chalky Matter, and at length it produces perfect Chalk, with which a Perſon may write as with common Chalk; I think I need not beg the Queſtion, but abſolutely pronounce, that the Origin of the Gout is as deep as where this Chalk is produced by it.

It

It may be worth Inquiry, how this Chalk is ſeparated from the Bone into the *Ligamentum burſale*; but when I treat of the Diſeaſes of the Bones, and ſhew, that both the Venereal Diſeaſe and the *Scrophula* will not only deſtroy this Chalk, but the whole Compages of the Bones, and when I have made it appear, that the Diſeaſes of the Bones are as uniform as thoſe on the Skin, and that they travel from each other quite through them all, we need not wonder, that, ſince we find this Chalk in the Joint, it muſt be brought out of the Bone with the gouty *Sinovia*. For I am of Opinion, that the *Medulla* of the Bone helps as well to ſupply the *Sinovia*, as to keep the Bones from becoming too fragile: It is true, the Middle of the Bone contains the greateſt Quantity of the *Medulla* to

Appearance; but when we ſee the Heads of the Bones are like a Honey-Comb, for what Uſe is it, but to convey the *Medulla* more immediately to the Extremities of the Bones?

Now, if from hence we may perceive the Diſeaſes of the Bones travel about from one to another, the *Creta* in the Joint, occaſion'd by the Gout, may be accounted for; and as it will not be retained in the Ligaments of the Joints only, but in Time work thro' them, ſo it may, by the Apertures made by the Diſeaſe in the Heads of the Bones, ſhew why the Chalk gets out thro' to the Joint.

Thoſe who have been ſubject to the Gout for a long time, will find the Muſcles liable to grate in their Motion, occaſioned oftentimes, by walking too much; and, for want of a proper

proper Supply of a kindly Secretion of what ſhould lubricate them, thereby bring on a new Fit, which otherwiſe the Patient would have eſcaped.

As to any Method of preventing this Diſeaſe, no abſolute Rules will, I fear, ever be eſtabliſhed; becauſe thoſe who are of a hot Conſtitution, and breed Blood plentifully, muſt either abate in their Living, or uſe great Exerciſe, before the Body becomes habituated to the Gout; or elſe they muſt loſe Blood, and, by lenient Purging, keep the Body cool; for it will be too late generally, after this Diſeaſe has made its Inroads, to bring the Conſtitution into its priſtine State. Again, thoſe who have it from too ſlow a Motion, where this Matter will lag by the way, and the Perſons are of a

cold Conſtitution, muſt uſe a contrary Regimen to the former; and by this means they may ſometimes puſh off what otherwiſe may cauſe this Diſtemper, by drinking more liberally of generous Wine.

I ſhall ſay no more of this Diſeaſe, but only obſerve, that I think the Occaſion of it chiefly ariſes from the Redundancies of Nature; and rather from eating too much, without uſing Exerciſe enough, than by too much Drinking: And the Cure of the Symptoms can proceed only from keeping the Parts affected very warm; by which the burning *Ichor* may be tranſpired or ſweated away.

As I am treating of the Diſeaſes of the Joints and Tendons, before I ſpeak of the Bones, I ſhall conſider the Method of curing a pricked Tendon.

SECT.

SECT. IV.

Of a Pricked TENDON.

WHEN a Tendon is wounded, as I have ſhewn that they all move in a *Vagina* or *Capſula*, the Fibres of the Tendon, which have been divided, diſcharge themſelves into the Wound, and, by the Motion of the Tendon, it is drawn up and down in the *Vagina*, and ſo the Diſcharge mixing with the *Sinovia*, the two Juices become an inflamed one; which, if not ſoon diſcharged, by laying the Wound open, inſinuates itſelf ſometimes throughout the whole Length of the Muſcle: And if it be the Tendon of one of the Fingers, or the like, it muſt always be laid open as ſoon as it can be; for after it has been expoſed to the Air, it muſt produce Incarnation,

Incarnation, and, on healing, adhere to the *Vagina*, and from thence cauſe a ſtiff Joint.

As I am treating of the Tendons, I ſhall conſider the Cauſe and Cure of a *Ganglion*.

SECT. V.

Of a GANGLION.

A *Ganglion* is a Tumor ariſing from a ſtrained Tendon. Thoſe of the Wriſt are more ſubject to this Diſeaſe than any others of the Limbs are: The Reaſon is, becauſe the Tendons of the Hands are oftener ſtrained, by lifting heavier Weights, in proportion to their Strength than any others are. As the Strength of a Tendon ariſes from its Fibres, ſo when one or more of them cracks,

its

its Fluid diſcharges itſelf into the *Vagina*, and there it is retained, appearing like the White of an Egg. If it has lain there long, its thinneſt Parts will perſpire away, leaving what remains of the Conſiſtence and Appearance of the vitreous Humour of the Eye.

It may often be cured by Accident, when, by a Knock, or greater Strain than the Membrane will bear, its Texture is ſo alter'd, that thereupon this Fluid perſpires quite away.

This I have often ſeen; but if, by this means, it gets backward amongſt the Tendons of the Wriſt, as great Care muſt be taken in the opening of them, as in the opening of an *Ecchymoſis*: For, as I have ſhewn the Air will agitate every Globule of the

Blood in an *Ecchymoſis*, it will in like manner affect every Part of this extravaſated Glear, inflaming the Neighbourhood, which retained it, to ſuch a Degree, as to endanger the Life or Limb of the Patient. For which Reaſon, if it is to be opened, let the Surgeon conſider how deep the Glear may reach; and if it appears to lie no farther than in the *Vagina*, provided it be opened largely, and treated as it ſhould be, it will do well.

CHAP.

CHAP. XVIII.

SECT. I.

Of the BONES.

I SHALL now firſt of all deſcribe the Formation of the Bones. The Bones, as I have ſaid before, in their firſt Formation, are, in an *Embryo*, hardly ſolid enough to be called membranous: As the other Parts become more compact, the Bones grow harder, by a chalky Matter, which will be retained in them: When this Chalk begins to ſhew itſelf, its firſt Appearance is on thoſe Parts of the Bone which become hardeſt and moſt compact, in the Form of ſmall Stars, whoſe Points every-where decuſſate, and ſhoot their *Radii* over each other, until the ſoft Membranes, being har-

dened by this Chalk, become the Bones we obſerve in all Animals.

Whilſt theſe Bones are growing and diſtending with the young Animal, the membranous Parts diſtend at the ſame time that the *Calx* is adding to them; and ſo the Bones, not being overcharged with this *Creta*, acquire ſuch a Degree of Flexibility, as occaſions them to bend before they can be broken. And from hence ariſes the Difference between the Nature of them in Youth and Age; the Cauſe of which I never expected to have explained; but is, according to my Apprehenſion, as follows.

I have often heard it asked, Why the Gravy of all young Animals, after they are dreſſed fit for eating, turns to a Jelly; when that of the ſame

ſame Sort of Animals, of a greater Age, does not; yet never heard a ſatisfactory Anſwer given to this Queſtion: But whoever conſiders the Uſe of Mr. *Papin*'s Digeſter, which which will diſſolve the hardeſt Bone, ſo that it may be eaten with a Spoon, may account for it, from there being ſo much more Heat neceſſary to diſſolve a hard Bone than a ſoft one.

As every one has not ſeen nor conſider'd the Nature of this Digeſter, it may not be improper to deſcribe it with its Uſe. This Digeſter is no more than a Boiler made very thick with Iron, having a very ſtrong Cover, which is faſtened on with iron Bandage and Screws, of as great Strength as poſſible, that it may not burſt, and thereby deſtroy the Operator. In this the hardeſt

Part of any Bone may be diſſolved, by adding Water to it, and applying a proper Degree of Heat, which will ſo rarefy the Water, that the Steam, not being able to eſcape, is ſent into the Bone with ſuch a Force, as to diſſolve the membranous Parts of it; whereby its Chalk is let looſe into the Soup, which was produced from the membranous Part of the Bone. When this is done, by adding warm Water you may waſh the Remainder till you may, by the naked Eye, diſcover it to be mere Chalk. The Bones may be macerated in Acids to cauſe them to produce the ſame Effects. I ſhall ſay nothing further on this Subject, but only conſider how the Bones and Membranes may be diſſolved by Heat only.

Whoever

Whoever conſiders, that the Method of making Glue is by diſſolving the membranous Parts of Animals in Water by boiling, may from thence, and from the Diſſolution of the Bones before deſcribed, infer the Cauſe whereby the Gravy of Lamb and Veal is converted into Jelly, when that of Mutton and Beef will not: For in the former, the Bones and Membranes are in their tender and growing State; and therefore a ſmall Degree of Heat, whether in boiling or roaſting, will be ſufficient to diſſolve them into their Gravy, and cauſe it to jelly; whereas, after they are become more compact, and fully ſaturated by Age, we find the Heat of *Papin*'s Digeſter is but ſufficient for the Purpoſe.

I have

I have now deſcribed the Formation of the Bones, with the Cauſe of their Denſity, and have alſo ſhewn how they may be diſſolved by Art. I ſhall in the next Place endeavour to demonſtrate what Diſeaſes they may be affected with, or diſſolv'd, whilſt they remain in the Body: And as we find the Bones of young Animals are eaſieſt diſſolved when out of the Body, I ſhall therefore firſt treat of the Diſeaſe which affects the Bones of young Children; which is the Rickets.

SECT. II.

Of the RICKETS.

THE Rickets in Children are diſcover'd by the Swelling of the Joints, and by the Bones becoming

becoming ſo ſoft and tender, as to yield and give Way in all Parts, but more eſpecially in their Heads and Extremities; ſo that there is not a ſufficient Quantity of this *Creta*, in proportion to the membranous Parts, to make them ſtrong enough to bear the Weight of the Body: But as the Nouriſhment, in Children affected with this Diſeaſe, is in general too luxuriant, the Bones partake of it, and from thence (more particularly at their Extremities) they cauſe the Joints to become weak, and very much deformed.

To cure this Diſeaſe, Care ſhould be taken to ſend this ſort of Children into a ſharp Air, and to feed them with more auſtere Diet than ordinary, rouſing their Blood by ſhaking and toſſing them often, giving them

now-and-then a little red Wine, and dipping them every Morning in cold Water. This may be the beſt Means to ſet Bounds to this Luxuriancy in the Growth of the Bones; for, till the *Creta* is ſeparated to a certain Degree of Solidity, the Bones are liable to receive too much Nouriſhment.

The Heads of theſe Children will ſometimes dilate to an enormous Size; but, by uſing ſome of the preceding Methods with them, they are in time generally reſtrain'd, and the Children outgrow the Diſeaſe.

This Diſtemper is ſuppoſed to ariſe in the Bones of Infants during their Growth; but as there is a ſecond, which ſometimes affects them a little

a little, I ſhall deſcribe it in the following Section.

SECT. III.

Of the Scrophulous Diſeaſe *in the* Bones.

THE ſcrophulous Diſeaſe in the Bones appears generally in young Subjects, but not ſo early as the Rickets do. In the Rickets, the Bones give Way in their firſt Formation; but this ſcrophulous Diſeaſe never affects them till they are completely formed.

A diſeaſed *Medulla* is the Cauſe of the Diſſolution of a ſcrophulous Bone; and, as I have before ſhewn, whenever the *Medulla* is not ſerviceable to the Parts it was to ſuccour, it muſt be-

become prejudicial to them; and from hence ariſes that which is whimſically called the *Spina ventoſa*, which is a great Swelling of the Bone itſelf.

There is this Difference betwixt the Swellings generally produced from a ſcrophulous diſeaſed *Medulla*, and thoſe produced from a Venereal diſeaſed *Medulla*; the *Spina ventoſa* of the ſcrophulous kind does not begin to decay externally, but, like a Pear, periſhes from the Heart of it: For when the poiſonous *Medulla* has begun to deſtroy any of the Blood-veſſels belonging to a Bone, it does not ceaſe till it has conſumed them all.

When this is the Caſe, there remains nothing to be done; but if it happens in a Finger, the beſt Method

is to extirpate it at the Joint: If in the carpal or metacarpal Bones, &c. pinch off as much of them as you can with a Pair of Watch-maker's Pliers, that thereby a Diſcharge of that poiſoned *Medulla* may commence; for, as it is manifeſt that the Diſeaſes of the Bones are communicated to one another through the Body, as the Diſeaſes of the Glands are, ſo in both Caſes nothing relieves them properly till they diſcharge their Enemy from the Camp; and by this means the *Medulla* will be renovated, by a Succeſſion of a more healthy in the Place of the diſeaſed Kind.

By this means the Blood-veſſels which are not deſtroy'd in the remaining Bones, may be reprieved, and at length ſaved; for where they

are once deſtroy'd, no Incarnation can ever be produced.

As a very fetid *Ichor* ever flows from the *Medulla* of ſuch Bones as I have been deſcribing, altho' I do not intend in general to preſcribe Dreſſings in the Cure of ſuch Caſes as I have been hitherto treating of, yet as this *Ichor* is frequently ſo ſharp as to admit of no Plaiſter, or what may, by retaining it on the Skin, cauſe it to excoriate, and emit a moſt nauſeous Stench, I recommend *Aq. Calcis* camphorated, which does better than any thing to dreſs theſe Sores withal, if it be apply'd internally with Lint preſſed out of it warm, and externally at the ſame time by Linen in ſeveral Folds preſſed out of the ſame *Aqua Calcis*. Great Endeavours ſhould be made to open

theſe Sores as large as conveniently they can, to come at the diſeaſed Bones early, and pinch them out before the Skin has been much heated and inflamed by the *Ichor*.

As I have been ſomewhat prolix in this Section, I ſhall proceed to treat of the Diſeaſes in the Bones ariſing from the Venereal Diſtemper.

SECT. IV.

Of the VENEREAL DISEASE *in the* BONES.

I SHALL have the leſs Occaſion to dwell long on the Deſcription of this Diſeaſe, having ſaid ſo much before on the Cauſes of other Diſtempers

pers of the Bones proceeding from a diſeaſed *Medulla*, therefore I ſhall only endeavour to ſhew the Cauſe of the different Effects produced from the diſeaſed Marrow of a ſcrophulous Perſon, and from that in a Perſon affected with the Venereal Diſeaſe.

Many are liable to reckon them of one Species, from the Effects they each produce; but on account of the Numbers of Children, who are dedeſcended from worthy Parents, being greatly affected with ſcrophulous Complaints, I ſhall ſuſpend my Sentiments upon it. But tho' the Bones are ſubject to be quite deſtroy'd by the infected *Medulla* in both theſe Diſeaſes, they differ vaſtly in the Manner of their Operation; for, in the *Scrophula*, it deſtroys the Bone quite through at once; but in the Venereal

Venereal Diſeaſe, it oftener begins its Miſchief externally, firſt raiſing and thickening the Membrane or *Perioſtium*, by the poiſonous *Medulla* or Oil that lies under it.

But perhaps this different Operation may proceed only from the different Subjects it operates upon; for the ſcrophulous Diſtemper ſeldom affects any but young Perſons; and their Bones being very tender, it deſtroys the Whole at once. It muſt be confeſſed, that, in the Venereal Diſeaſe, when it ſeizes on the more ſpongious Bones, it acts in the ſame manner as in Infants; as for Inſtance, When the *Os Naſi*, or *Os Palati*, are at all affected, it ſeldom or never happens but that the Whole of them is deſtroy'd. For, as I ſaid before, if their Blood-veſſels are deſtroy'd

(which in theſe Bones are very numerous), the Bones themſelves cannot be ſupported. And although the Patient be quite clear from the Venereal Diſeaſe in all other Reſpects, yet if the Compages of theſe Bones have been deſtroy'd, they will moulder away a long time after, to the Diſgrace of the Surgeon, in the Opinion of ſome, who notwithſtanding is no-way to blame.

The more ſolid Bones, as the *Tibia* and the like, are from hence not ſo liable to be attacked all at once; and therefore they generally begin to have their *Laminæ*, or rather Fibres, affected externally, thereby heating and thickening the *Perioſteum*.

When this is the Caſe, the Tumor of the Bone is called a Node, which ſeldom

ſeldom or never has any Matter, muſt be open'd to diſcharge the diſeaſed *Medulla,* or elſe you never can properly cure your Patient.

I know the common Method of doing it is a very bad one, being very painful to the Patient, and very tedious in the Cure, which is to apply a Cauſtic on the Node, which ſeldom or never reaches deeper than to the inflamed *Perioſtium*; this is afterwards generally to be got thro' by Eſcharotics, and when the Bone is laid bare, which is commonly found ſoft and ſpongious on the Outſide of it. To dry up this diſeaſed *Ichor* of the Bone, the *Pulvis Calcis*, *Pulvis Euforbii* or *Aluminis uſti*; but, preferable to all the *Actual Cautery* is generally apply'd, that the ſound Parts underneath may, by

their Granulation, caſt off thoſe which are diſeaſed.

My Objection to either of theſe Methods is, that as you cannot gueſs whether the Node be rotten quite to the *Medulla* or not, what End does the Burning anſwer, if it ſerves to dry up the exterior Part of the diſeaſed Bone, thereby enabling the ſound Part underneath, by Incarnation, to caſt it off? which I acknowlege it ſometimes may; yet, for once where it anſwers this Purpoſe, it ten times does the contrary; for the Operator, not knowing how nigh he may be to the ſound Parts underneath, or whether he may find the Parts deſtroy'd quite to the *Medulla*, burns on frequently when he ſhould not; thereby conſuming the young Granulation from

from time to time juſt as it is forming, to the great Delay of the Cure.

To prevent all of theſe Evils, my Method in opening all Nodes is, to apply a Piece of Plaiſter, the Length and Breadth of the Node, and, by each Side of the Plaiſter, I divide with a ſtrong pointed Knife the Teguments quite to the Bone, and do the ſame at each End; by which the Piece in the Middle becomes as an Iſland. I then take one of my Sculpers, or broad Gravers (for I have always two of them, one half an Inch broad, and the other half as broad as the former), with the largeſt I enter under the *Perioſtium* at the End of the ſeparated Iſland before deſcribed, and with it I bring away as much of the ſpongious Bone as I can, and what remains I continue

to ſculp it all away at that firſt Operation, till I feel ſome ſound Parts of the Bone underneath with my Graver; if I find none, but that I get to the *Medulla* before I find any Blood-veſſels in the Bone, there is nothing to be hoped for; but that the other Side of the Bone may not be quite deſtroy'd; and if it be not, a good Cure naturally follows from the Diſcharge of the poiſonous *Medulla*, without which it always communicates the Diſeaſe to the neighbouring Bones.

I have ſeen a Sceleton with every Bone of it carious; for, as I before remarked, if the Bones are affected, the Diſtemper makes its Progreſs through all of them, and ſpares the reſt of the Body; in like manner when

when the *Cutis* is affected, the Bones ſeldom or never are.

My Manner of operating on the Bones has this Preference to that of a Cauſtic, that I perform the whole Operation at one and the ſame time, before any Heat or Turgeſcence from the coming on of Digeſtion is ariſen on the Edges of the Wound; whereas, if the Bone is laid bare by a Cauſtic, a large turgid broad Sore is made before any thing can be attempted; but, in my Method, the whole that Art can do is performed at once with much leſs Pain than the Patient would have ſuffer'd in the ſame time, only during the Operation of a Cauſtic.

I would not be underſtood to mean that I am wholly againſt the Uſe of

a Cautery on any Occaſion; for the paſſing a Cautery into a carious Bone, or the like, may poſſibly be of ſome Service; but, in burning the Surface of a Bone, as you cannot know how nigh you are to ſound Parts, ſo you may be deſtroying what your Graver or Sculper immediately would have diſcover'd, when the Bone begins to ſhew any Signs of Bleeding; for then you may be ſure Incarnation will follow.

I find this Graver of great Service in the ſmall Bones, which are ſofter than the *Tibia*, as the Ribs, the *Os Calcis*, and the like, whoſe Surfaces only are often foul'd, after the *Periоſtium* has been deſtroy'd by any means; for then it frequently is not adviſable to expoſe them to the Air, by laying open the Part which covers them;

them; and ſometimes you cannot if you would, by reaſon of your Situation: In ſuch a Caſe you may paſs your ſmalleſt Graver almoſt where you can a Probe; and if thereby you can cauſe the Bone to bleed, it will ſoon be cover'd with young Fleſh; without which it proves more carious, the more it has been greaſed with Medicine, or expoſed to the Air.

This Doctrine may ſerve to ſhew how a *Callus* is formed in a broken Bone; for firſt the Blood-veſſels, which are opened in the Bone, form a Granulation, which receives a Denſity from the cretaceous Matter ſhooting into it, which originally hardened the Bone.

Having, as I propoſed, ſhewn the different Diſeaſes of the Bones, with

the Nature of their Cure, and being inclined to go a little further, following the ſame Method I have hitherto purſued, which has been to treat next of ſuch Diſeaſes as the Reaſoning in the former Chapter led me to; therefore, as the cretaceous Matter in the Bones, when out of its natural Situation, muſt be the efficient Cauſe of the Stone in the Kidnies and Bladder, as well as in the Joints of ſuch as are afflicted with the Gout, I ſhall proceed to ſpeak of it.

CHAP.

CHAP. XIX.

Of the STONE *in the* KIDNIES *and* BLADDER.

TO ſhew the probable Cauſe of this Diſeaſe, I muſt have Recourſe to what I formerly have advanced, *viz.* that every Secretion or Separation of any kind of Matter in the whole Body is owing to the Form of the Strainer it is ſecreted by; and therefore I ſhall firſt ſhew, that the Nature and Uſe of the Kidnies, in a ſound State, are to ſeparate the Urine only: Now, as their Situation is nigh to the great Artery, which ſupplies them by the Emulgents with the great Quantity of Blood out of which the Urine is ſecreted, it is no Wonder, that, from

thence, and the great Preſſure they are liable to receive ſometimes after a Debauch, or from their being charged after a Cold by glutinous Matter in the Blood, that thoſe Ducts in the Kidnies, which were adapted only to ſecrete the Urine, ſhould be overſtrained, and from thence enlarged; whereupon they begin to let more than Urine through them into their *Pelvis*; and perhaps the *Mucus*, which ſhould be no more than is ſufficient to line the urinary Paſſages is increaſed, and ſo it begins to lodge by the Way. If at this time cretaceous Matter ſhoots into it, here commences what is call'd a *Saburra*, or a petrify'd Slime.

In this Caſe, bleeding the Patient, to take off the *Impetus* of the Blood, and large Draughts of Whey made of the purging Waters, or common

mon Whey with Salts, and ſweetened with ſoft Syrup, being taken, may cauſe the Urine to flow more plentifully, and by that means drive the *Mucus* along with it. If they do not, and the *Saburra* grows too large, and hardens by its Stay in the Kidney, then it becomes a *Nucleus*, or the Beginning of a Stone; which, if it continues there, may increaſe to a great Size; if it deſcends into the Bladder, and paſſes not from thence, with the Urine, it becomes a Stone of the Bladder; for in all People there wants a Beginning or *Nucleus* only, for the calculous Matter to ſhoot on to produce a Stone, as may be ſeen by the Quantity of this Matter which an unglazed Chamber-pot will ſhew, when it has not been cleaned for a long time. And as thoſe who have the Gout are moſt

liable to be troubled with the Stone, it ſeems to me that the Gout lets looſe the cretaceous Matter from the Bones into the Blood, and from thence I ſuppoſe it to be diſcharged into the Kidnies in the forming a Stone.

I have treated this Subject of the Stone as a Conjecture only, and therefore ſhall ſay no more concerning it; but as the Diſeaſe I propoſe to conſider next has not been directed, by any thing already treated of, to be ſpoken to, and as it relates to the *Thorax*, I have reſerved it as the laſt.

CHAP.

CHAP. XX.

Of the EMPYEMA.

THIS Diſeaſe is an Impoſtumation in the Breaſt; and as moſt Authors recommend to the Surgeon not to open them till ſome thin Point offers itſelf to the Touch, it gives me the Occaſion of treating of this Diſeaſe: For there are many People now living, who would not have been ſo, had it not been for a peculiar Obſervation I have made, from the opening a dead Body heretofore, whoſe left Hemiſphere of the *Thorax* was ſo full of Matter, that, the Ribs were all lifted up with it. when I open'd the Breaſt, it diſcharged more than a Gallon. This ſet me on examining afterwards into into this Diſeaſe, and by the Reſult of

of that Examination I have been inſtrumental in ſaving the Lives of many, who if they had ſtay'd till ſome Point had offer'd would probably have loſt them: For I have very often diſcharged not leſs than a Gallon of purulent Matter at once through an Aperture made by Inciſion betwixt the Ribs, when no Inflammation has appear'd on the Part.

The beſt Method of doing this Operation is to divide the Skin with the intercoſtal Muſcles near to the *Pleura*; and that I chuſe to puſh thro' with my Finger for Safety. When I have diſcharged the Matter, I keep the Wound open by a *Canula* large enough to diſcharge ſuch glutinous Matter with ſmall Sloughs through it, as are often ſeparated from the Lobes of the Lungs: For I believe theſe Abſceſſes, when they are quite in the Cavity, generally

generally proceed from the Lungs; and probably the *Empyema*, which appears inflamed outwardly, and comes to a Point, ariſes from a Pleuriſy, or an Inflammation only of the *Pleura*; although it may diſtend itſelf largely inward at ſometimes.

That which I have deſcribed, I never ſaw diſcolour'd; but the affected Side of the Breaſt ſeems greatly diſtended; the Ribs not falling one after another, but appearing on a ſtrut; not but ocular Demonſtration in this Caſe is far better than Deſcription.

I had not mention'd this Diſeaſe, had I ever met with it thus diſtinguiſh'd before; therefore I thought, it ſuitable to the Purpoſe of this Treatiſe, which was only to account for ſuch Things in my Profeſſion, as no Author I have met with has yet

done. As I have now finiſhed it, I muſt ſubmit to the Public of what Service it may be: And altho' I give my Opinion only, without Regard had to any Author, yet, on ſhewing the Chapter on the Venereal Diſeaſe to a Friend, he ſaid my Notions of it were thoſe of Dr. *Boerhaave*: I anſwer'd, I was glad of it; and tho' I knew no Book that contained one Deſcription like mine, yet I ſhould be very well pleaſed to find them all in ſome Author or other. And as to the Favour or Diſavour of my Readers, if it be approved of by ſuch who know little, and they ſhall ſay they knew it before, or if it be diſliked for deviating a little from ancient Practice, I wrote it with a good Intent, and therein ſhall reſt ſatisfied.

MVSEVM BRITANNICVM

FINIS.